

## TITLE: Guideline for Developing, Revising, and Distributing New or Revised Work Instruction

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### References: Project Website

- All Items - <https://xnet.cbifederalservices.com/sites/es/IWOW/IWOW%20WIs/Forms/AllItems.aspx>
- Published Work Instructions only – <https://xnet.cbifederalservices.com/sites/es/IWOW/IWOW%20SOPs/Forms/Published%20SOPs.aspx>
- Published Enclosures only -
- <https://xnet.cbifederalservices.com/sites/es/IWOW/IWOW%20SOPs/Forms/Published%20Forms.aspx> Source files Work Instructions only - <https://xnet.cbifederalservices.com/sites/es/IWOW/IWOW%20SOPs/Forms/SOP%20Source%20Files.aspx>
- Source files Enclosures only - <https://xnet.cbifederalservices.com/sites/es/IWOW/IWOW%20SOPs/Forms/Enclosure%20Source%20Files.aspx>
- Enclosures: Tutorial Supplement IWOW-001 (OTH-128)

### 1. PURPOSE

The purpose of this guideline is to establish uniform processes for distributing Work Instructions to the Industrial Waste and Oily Waste (IWOW) Treatment Facility and Bilge and Oily Waste Treatment Systems (BOWTS) personnel.

### 2. BACKGROUND/HISTORY

Under Performance Work Statement Environmental Services Contract N62473-10-D-4009 (commonly referred to as PWCS – Public Works Contract San Diego), CB&I provides industrial and oily waste management services to military installations in the San Diego area. To comply with federal and state regulations, Work Instructions (SOP) have been developed to guide operations personnel on the proper operation, maintenance, and management of the facilities. The sequential list of the Work Instructions is listed on the Project Website. These Work Instructions provide detailed information on how to execute the Performance Work Statement (PWS), with an emphasis on regulatory compliance, personnel safety, and adherence to internal Navy policies.

CB&I was awarded the Performance Work Statement for NAVFAC Southwest Environmental Services contract to Operate the IWOW and BOWTS facilities in 2005. CB&I, using many of the existing PWC SOPs as templates, developed SOPs for IWOW and BOWTS activities. CB&I “branded” these SOP’s with trademarks and references to CB&I in the body of the SOP. In accordance with Navy direction CB&I removed specific references to CB&I in the SOP’s and Enclosures. To avoid confusion, between the “Operator” (currently CB&I) of the facilities and facility operators (waste handlers and plant operations personnel), the “Operator” of the facilities will be referred to as the “Incumbent”. This revision also includes format changes to the header data. The revision of SOP’s/Enclosures will be a significant effort so removal of the CB&I branding and revision of the header format SOPs will be accomplished as SOP’s/Enclosures are revised.

### 3. ACTION

This procedure applies to personnel authoring or revising SOP’s for work related to IWOW and/or BOWTS operations.

#### 4. QUALIFICATIONS AND TRAINING REQUIREMENTS

At a minimum, all staff responsible for implementing work covered by this SOP must read and understand its contents and sign a training record (e.g., TR-09, TR-10), in accordance with SOP IWOW-051.

#### 5. PROCEDURE

##### 5.1 SOP Preparation and Approval

SOP's will be maintained on the project website SOP Document Library and will include SOP source files (in MS Word) and the published "official" version as and Adobe Acrobat file (i.e., "IWOW-###.pdf"). The SOP preparation and approval process is described below.

- a) The authorized SOP author/reviser is to check the SOP Source file out (use the check out option on the SOP Portal page) and make the desired revisions to the document with the "track changes" option so reviewers/approvers can easily identify changes to the document. In addition to changes to the document instructions, the header data is also to be updated as detailed below (see enclosure OTH-128 for details).
  - i) The document header is to include the Procedure Number the Revision number, the Revision Date and the number of pages. The first published version of an SOP will be Revision # 0. A final approved and published SOP/Enclosure file header is to look like the following:



- ii) When a Draft SOP is prepared, it is to be given a "Draft" designation in the header with the next revision number (i.e. "Revision #4DRAFT"). Subsequent revisions to drafts are to be given draft numbers (i.e., "Revision #4DRAFT2"). A draft SOP/Enclosure file header is to look like the following:



- iii) Initially Draft SOP's will be placed in the IWOW SOP Document Library in the Source SOP folder. When the Draft SOP is saved on the portal a "Web File Properties" dialog box will pop up to gather the information bulleted below on the document. For new WIs, fill in all information as appropriate. For revised WIs, at a minimum, be sure to update the Revision Date, the Status and Rev. No. Marking the correct Status is very important because it will flag those SOP & Enclosure files that need to be finalized.

- SOP Title
- Description
- Revision Date
- Status
- Notes
- Category
- SOP No.
- Rev. No.

- b) After the changes are made to the SOP, the reviser will note the changes made in the "Description of Changes" box on the approval page and enter the date.

- c) When SOP's are ready for review the file will be placed in the IWOW SOP Document Library in the Review SOP folder (after "checking in") by clicking on "edit properties" in the drop down menu and selecting "5\_in review". The reviser is to notify the IWOW Project Manager, SOP and Enclosures "GateKeeper", and others (e.g., Lead Operator, Health and Safety Officer) as appropriate that the SOP is ready for review. The identified reviewers/approvers will perform internal reviews on the WIs, and changes will be incorporated as needed. The Document GateKeeper will be responsible for monitoring the review process.
- d) SOPSOPThe file header will be updated to indicate the revision number and approval date (removal of DRAFT status), by the Gate Keeper and an email sent to the QC Manager for management review and approval (signature image) to the SOP approval page.
- e) The QC Manager will review the SOP and sign the approval page and then sends an email to the Final Signature Authority (Program Manager) and cc to the author/reviser that the SOP is ready for final signature (after he changes the status to 6\_final signature).
- f) The Program Manager will pdf the word document and apply a controlled digital signature to the document and that will indicate final approval of the document.
- g) The Program Manager (or designee) will change the category to "1\_published WIs" and uploads the pdf version to the published SOP folder. Save the Word document as a source file. The Program Manager then changes the category to 01\_published SOP.
- h) The Program Manager (or designee) changes the status on the word version to "final", and the category to "03\_source file" (see 5.2 below).
- i) SOP changes/additions/subtractions/consolidations will be noted in the monthly QC report.
- j) For further instruction on SOP approval process on the portal, refer to OTH-128, Tutorial Supplement IWOW-001.

## 5.2 Enclosure Preparation and Approval

As with the SOP's, Enclosures will be maintained on the project portal and will include enclosure source files (e.g., Word, Excel, Dwg files) and the published "official" version as an Adobe Acrobat file. The following procedures are to be implemented to prepare or revise Enclosures in the performance of Project activities:

- a) The Enclosure author/reviser is to check the Enclosure Source file out (use the check out option on the SOP Portal page) and make the desired revisions to the document with the "track changes" option on so reviewers can easily identify changes to the document.
- b) The header data is also to be updated. The Enclosure header is to include the Document ID, Used in (the SOP number(s) the enclosure is used in), Number, the Revision #, the Revision Date. Drafts are to be designated as such in the Revision # by placing the word "Draft" after the revision number. Revised drafts documents are to be named with numbers after the word Draft (e.g., for 2<sup>nd</sup> revision – "Revision #: 2Draft", 2nd draft "Revision #: 2Draft2", etc.)

Draft:

| Header   |                         |
|--|-------------------------|
| NAVFAC Southwest Environmental Services        | Doc ID: INSP-1          |
| Industrial Waste/Oily Waste Facility           | Used In: IWOW-006       |
| Bilge & Oily Waste Treatment System Facilities | Revision #: 2Draft      |
|  | Revision Date: 04/03/09 |

Final:

| Header   |                         |
|--|-------------------------|
| NAVFAC Southwest Environmental Services        | Doc ID: INSP-1          |
| Industrial Waste/Oily Waste Facility           | Used In: IWOW-006       |
| Bilge & Oily Waste Treatment System Facilities | Revision #: 2           |
|  | Revision Date: 04/03/09 |

- c) Once supervisory personnel/reviewer revisor are satisfied the enclosure is satisfactory, the revised Enclosure will be moved to the review folder 05\_. An email is to be sent to the Project Manager and the Gate Keeper that the enclosure is in the review folder.
- d) The Project Manager reviews the enclosure. If changes are acceptable, changes are "accepted" and "track changes" are removed. Header data is to be updated and the word "draft" removed. Only the Project Manager needs to review and click in the box that he has reviewed it. No signature is required. Project Manager emails the Gate Keeper and Reviewer/reviser that the documents has been approved.
- e) The Project Manager (or designee) will move the source file back to 4\_source forms. The Document Gatekeeper will pdf and update properties of the approved Enclosure.

### 5.3 Distribution and Filing

CB&I will distribute and maintain the final published WIs and Enclosures, in electronic form as indicated below. Electronic copies will be maintained in pdf format on the NBCNI, NBSD, and NBPL operations desktops:

- a) Published IWOW WIs Document Library: CB&I will maintain an electronic version of each Final IWOW SOP on the project website. The Document Library includes metadata that summarizes details of the SOP, including SOP Number, SOP Name, Revision No., and Revision Date, and provides a brief description of the SOP contents.
- b) Document Control: CB&I will control the distribution of all Final WIs (Revision 0 and above). The official Controlled version of the WIs and Enclosures will be maintained on the project website. The Document Gatekeeper is responsible for maintaining electric copies of the Published SOP pdf and Enclosures on the operator desktops. This person updates the single desktop file by extracting the obsolete SOP(s) or Enclosure(s), inserting the new SOP(s) or Enclosure(s), updating the file ID(s) in the bookmark.
- c) Printing Enclosures for Use: WIs and Enclosures will be printed from the desktop file. Avoid using copies to make more copies. Plant lead/supervisors are responsible for ensuring that the copies of all forms remain legible.

### 5.4 Employee Review

- a) Personnel will be trained and/or notified of changes in WIs and Enclosures in accordance with IWOW-051.
- b) SOP's have to be reviewed annually. Go to the "last reviewed" library under SOP Source documents and change date last reviewed after you review an SOP. The Annual Review date will be noted on the SOP cover page (Annual Review check-marked, and review date listed), the IWOW Manager, QC Manager and Program Manager will sign and enter the review date next to their signature on the cover page. The Annual Review Date will be noted on the portal document listing. Note: A Revision Date qualifies as an Annual Review Date, and starts the clock for the next annual review. If there are changes to be made, follow procedure listed above.

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# Standard Operating Procedure IWOW-002

## TITLE: Routine and Scheduled Maintenance for Industrial Waste and Oily Waste (IWOW) Treatment Plants

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- References:**
- (a) Code of Federal Regulations, Title 40
  - (b) California Code of Regulations, Title 22
  - (c) California Code of Regulations, Title 23
  - (d) EPA RCRA/Superfund Hotline Faxback 13192/9483.1988/(13)
  - (e) EPA OSWER Policy Directive No. 9483.00-1, EPA/530-SW-86-044, Technical Resource Document for the Storage and Treatment of Hazardous Waste in Tank Systems, December 1986
  - (f) American Petroleum Industry, Standards 620, 650, 651, 652, 653
  - (g) American Petroleum Industry, Publications 306, 307, 2015, 2026, 2027, 2207, 2217A, 2350
  - (h) ASTM International, Standards, 2657, Thermoplastic Pipes, and C1443 Rev A, Standard Specification for Precast Reinforced Concrete Box Sections for Culverts, Storm Drains, and Sewers
  - (i) National Association of Corrosion Engineers, Recommended Practices 181-94; 193-93; 196-96; 376-76; 592-92; 188-90; 288-94
  - (j) Steel Tank Institute Publication R893
  - (k) NAVSEA 0093 Surface Preparation
  - (l) 40 CFR Sections 112.1- .15, Spill Prevention, Control and Countermeasure (SPCC)
  - (m) California Health and Safety Code Chapter 6.67, Aboveground Petroleum Storage Act, Sections 25270-25270.13
  - (n) Process Safety Management (PSM) of Highly Hazardous Chemicals (HHCs) Standard, 29 CFR 1910.119
  - (o) American National Standards Institute (ANSI)
  - (p) Underwriters Laboratories (UL)
  - (q) American Society of Mechanical Engineers (ASME)
  - (r) Naval Base Point Loma BOWTS conditional Title 23 exception approval Department of Environmental Health, Hazardous Materials Division

- Enclosures:**
- (1) Pump Station Exemption for the BOWTS, Naval Base Point Loma, and Conditionally Authorized Permit Closeout at the Naval Base Coronado Fuel Farm ([OTH-82](#))
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### 1. PURPOSE

To establish a standard for the routine and scheduled maintenance of the Industrial Waste Treatment and Oil Recovery facilities operated by Operator.

### 2. BACKGROUND/HISTORY

IWOW facilities are regulated as hazardous waste treatment facilities and operate in accordance with the inspection, repair, and maintenance requirements specified in **References (a)** through **(c)**. The NBCNI facility has a full hazardous waste treatment permit and as such, is subject to the California Code of Regulations, Title 22 (22 CCR), Chapter 15, while the NBSD and NAB facilities have a Conditional Authorization hazardous waste treatment permit and are subject to criteria under 23 CCR because these systems meet the definition of an underground storage tank. While the NBPL system also meets the definition as an underground storage tank, it has obtained a conditional exemption from 23 CCR in accordance with **Reference r** and **Enclosure 1**. The predominant portion of the

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maintenance program is associated with above and underground storage, transfer, and treatment tanks, along with the ancillary equipment associated with these tank systems.

### 3. ACTION

This procedure applies to IWOW personnel.

### 4. QUALIFICATIONS AND TRAINING REQUIREMENTS

At a minimum, all staff responsible for implementing work covered by this SOP must read and understand the contents, and sign a Document Review Training Record (TR-10), in accordance with SOP IWOW-051.

### 5. PROCEDURE

#### SAFETY:

At a minimum personnel, in addition to their standard uniform, will wear ANSI rated steel toed boots, hard hat and safety glasses. A Job Safety Analysis (JSA) will be filled out prior to commencing work to analyze all potential hazards of the repair/maintenance activity, to mitigate risks to personnel and to properly communicate those hazards to all personnel involved. Additional personal protective equipment may be needed depending on the job i.e. chemical resistant suits/boots, face shields, hearing protection, safety goggles, tyvek, polyvinyl tyvek etc.

#### 5.1 Applicability

This instruction does not apply to equipment that is broken or needs attention, as those situations are considered non-routine, non-scheduled repairs. Repairs to equipment found to be deficient are managed using the Maintenance Request Form (designated OP-9), provided in SOP IWOW-006. If the equipment cannot be repaired in accordance with the manufacturer's specifications or replaced with the identical or upgraded components, the Maintenance Request Form (MRF) is referred to the IWOW Manager for resolution. An MRF is to be generated if the non-scheduled repair identified cannot be remedied during the current shift.

#### 5.2 Procedures

Title 22, CCR Section 66264.195(e) states as part of the inspection schedule required in section 66264.15(b), tank owners/operators shall develop a schedule and procedure for assessing the condition of the tank. Title 22, CCR Section 66264.15(d) requires the owner/operators shall develop a schedule and procedure for assessing the condition of the tank. Title 22, CCR Section 66264.15(d) requires the owner/operator to record the inspections in an inspection log or summary as well as retain the records for at least 3 years from the date of inspections. At a minimum, these records shall include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions. Title 22 CCR Section 264.195(c)(1) requires that any cathodic protection systems be inspected within 6 months after initial installation and annually thereafter. Title 23 requires certification of the secondary containment, leak detection systems, and repairs, based on frequencies and conditions too numerous to relay in this instruction.

**References (a)** through **(c)** also require an independent professional engineer (PE) to certify the work performed on tanks when there has been a major leak or if the tank system has been modified. While the definition of a major repair is not available in the regulations, **references (d)** and **(e)** indicate that the EPA intends the PE certification requirement to apply to components affecting the tank system's structural integrity, e.g., the more major, non-routine and complex retrofit/replacement tasks. For example, the installation of new tanks including reinstallation of existing tanks, the installation of new secondary containment systems, the replacement of extensive piping or internal components, and installation of sacrificial anodes are relatively complex tasks that are critical to structural integrity and

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require oversight to ensure proper installation. The independent registered PE or independent qualified installation inspector supplies this oversight.

Operator has chosen to incorporate **references (f) through (k)** as the applicable standards and guidelines for inspection, surface preparation, and protective coating maintenance work on tank systems, to parallel the standard industry practice. Most of the tank systems are carbon steel and metal. Tanks in IWOW operations are either pressure vessels or atmospheric vessels. Pressure vessels are built to ASME Boiler and Pressure Vessel Code. The atmospheric tanks would fall under American Petroleum Institute (API) 650 (Welded Steel Tanks for Oil Storage, Tenth Edition, Nov. 1988 with Nov. 2001 Addendum) and API 653 (Tank Inspection, Repair, Alteration, and Reconstruction, Dec. 2001). Cathodic protection is required per API Recommended Practice 651 (Second Edition, December 1997), and National Association of Corrosion Engineers (NACE) Recommended Practices (RP) 01-69, 01-93, and 02-85. The industry standards for inspection, surface preparation and protective coating guidelines are based on the Steel Structures Painting Council (SSPC) and National Association of Corrosion Engineers (NACE) procedures. For example, SSPC-PA-2, Nov. 1, 1982 Paint Application Specification No. 2 is used for Measurement of Dry Paint Thickness with Magnetic Gauges, while SSPC-SP1 through SSPC-SP12 is used for surface preparations. NACE #1 through NACE #5 are also used as specifications for surface preparation.

Operator has identified and chosen to incorporate **references (l) through (q)** as the applicable standards and guidelines for inspection and maintenance work on aboveground hazardous material storage tanks, to parallel the standard industry practice. The EPA's Risk Management Plan (RMP) mandates a prevention program that includes maintenance; the OSHA Process Management Standard of Highly Hazardous Chemicals mandates a prevention program that includes evaluation of the mechanical integrity of critical equipment; while EPA's 40 CFR Sections 112.1-15, Spill Prevention, Control and Countermeasure (SPCC) and the California Health and Safety Code Chapter 6.67, Aboveground Petroleum Storage Act, Sections 25270-25270.13 have requirements for the aboveground storage tanks of petroleum products. While none of these standards or regulations specifies the frequency or type of inspection to be conducted, Operator will implement a program to ensure the safety of workers, the public and the environment by preventing chemical incidents at the IWOW facilities.

Before conducting any tank repair work, a preliminary inspection is conducted and depending on the results of a visual inspection, a written work plan may be required. Repair plans may be based on prior repair procedures on file for similar situations. These repair plans may be prepared and obtained from qualified consultants or by a Operator engineering staff person. Repair plans obtained from consultants will be reviewed for acceptance by an Operator engineering staff person before implementation. A written work plan includes all necessary steps including, as required, the existing coating removal, the surface preparation for the application of new coatings, repair of weld seams, materials for new coating, acceptable methods, and post repair inspections.

Operator will contract an independent third-party for coating and structural integrity inspections when a complete internal coating system is being replaced, regardless of whether the work is performed using in-house Operator resources or by outside contractors. Any welding work performed on the metal tanks will also require non-destructive examination inspections, as specified in API 653.

The IWOW Treatment Facility has a unique construction at NBCNI involving piping that is double-walled thermoplastic, high-density polyethylene (HDPE) and some pump stations with a concrete secondary containment and HDPE bladder for the primary containment. At present there are no non-destructive testing standards for the HDPE bladder material, however ASTM 2657 is the standard for thermoplastic piping. Operator has chosen to include this standard as part of the repair criteria for both the HDPE piping and primary containment (bladder materials). This standard specifies three methods of welding (butt fusion, extrusion, and hot air) and the one time testing of a welder to obtain certification for making these repairs. All repairs to the HDPE piping and bladders will consist of butt fusion and extrusion welding repairs by a certified welder, as these are structurally more sound methods and will yield a repair at least 100% or greater for the pressure rating of the affected system. In addition to periodic visual inspection, spark testing or dye penetrant testing of bladder walls will be acceptable for structural integrity testing of the bladder portion of the pump station system.

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**5.3 Responsibilities**

The IWOW Manager is responsible for ensuring that all scheduled maintenance is performed in accordance with this Standard Operating Procedure, that sufficient documentation is established and maintained readily available, that enclosures are periodically updated. The IWOW Manager is responsible for preparing, obtaining, reviewing, or accepting all tank repair plans before implementation. A copy of these work plans must be placed in the individual tank repair history files, along with the original or a copy of all inspection reports associated with the individual tank. The IWOW Manager is also responsible for providing engineering review and written updates to any equipment maintenance procedures found to be lacking, faulty, or requiring upgrades.

The IWOW Manager will delegate the following tasks to the Management Support Team:

The IWOW Lead Operators are responsible for ensuring the scheduled preventive maintenance is assigned to operations staff on a monthly basis and documented using the Maximo Maintenance Program. The IWOW Lead Operators are also responsible for coordinating with the Operator engineering staff to ensure tank maintenance occurs within the minimum scheduled frequency.

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# Standard Operating Procedure IWOW-003

**TITLE:** Transfer of Oily Waste from Vessel to the Pier Oily Waste Riser or Tanker Truck

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**References:** (a) SOP IWOW-020 "Waste Acceptance Criteria for the Bilge and Oily Waste Treatment Systems"  
(b) Title 33 Federal Code of Regulations Section 154 and 156  
(c) Base Hazardous Material Spill Contingency and Emergency Response Plans  
(d) SOP IWOW-022 "Waste Acceptance Form"  
(e) SOP PWC 600 "Ship to Shore Mechanical Services Including: Steam, Air, Potable Water, Sewage, Oily Waste, Nuclear Grade A Feedwater"

**Enclosures:** (1) BOWTS Facility and IWOW ORP Prohibited Waste Summary (TAB-15)  
(2) Declaration of Inspection (Vessel/Barge-Facility) Form (OTH-27)  
(3) Declaration of Inspection (Truck) Form (OTH-032)  
(4) Declaration of Inspection (Contractor-Facility) Form (OTH-061)  
(5) NBCNI IWOW Contacts and Specific Requirements (OTH-83)  
(6) NBSD Contacts and Specific Requirements (OTH-79)  
(7) NBPL Contacts and Specific Requirements (OTH-80)  
(8) Shutdown Checklist (CL-21)  
(9) Waste Acceptance Form (OTH-05)

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## 1. PURPOSE

To provide procedures and guidelines for off-loading oily waste (OW) or waste oil from vessels to the pier OW riser or tanker trucks.

## 2. BACKGROUND

This SOP complies with Title 33 Code of Federal Regulations and the San Diego Regional Operations Manual for Oily Waste Collection and Treatment Facilities.

## 3. ACTION

**NOTE:** 33 CFR 156.100 applies to "the transfer of oil or hazardous material on the navigable waters or contiguous zone of the United States to, from or within a vessel with a capacity of 250 barrels or more..." A barrel is defined to have a capacity of 42 gallons which equates to 10,500 gallons. As a practical matter, Operator requires that DOIs be used for every transfer at NBCNI, NBSD and NBPL. However, at NAB, Operator does not require adherence to this SOP UNLESS the 10,500 gallon capacity is met. Transfer procedures for NAB are detailed in SOP IWOW-068.

This procedure applies to cognizant Operator (Operator) personnel (facility operator unless identified otherwise), hereinafter referred to as the Facility Person in Charge (FPIC); the cognizant Navy representative in control of transferring oily waste from a vessel to a shoreside collection system, referred to as the Vessel Person in Charge (VPIC); or the Contractor representative in control of equipment transferring oily waste from a vessel to a shoreside collection system or to a tanker truck. This SOP covers the following (four) OW transfer scenarios:

- a) VPIC coordinates and ship personnel transfer oily waste to pier OW riser.
- b) VPIC coordinates and contractor provides equipment, hoses, and shoreside personnel to transfer oily waste to pier OW riser.
- c) VPIC coordinates and contractor transfers oily waste to shoreside tanker truck.

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- d) Tanker truck will transfer tanker truck contents either to Bilge and Oily Waste Water Treatment System (BOWTS) or Industrial Waste Treatment Plant (IWTP), or to off-site disposal.

#### 4. DEFINITIONS

- a) AFFF – Aqueous Film Forming Foam is a firefighting agent used to extinguish flammable liquid fires on surface ships. The AFFF is mixed with seawater to create a 3 to 6 percent solution.
- b) Bilge Water – Bilge water is a mix of primary water with some oil (normally less than 5 percent) and other unspecified substances resulting from the normal operation of a vessel. Oily waste produced by means other than the normal operation of a vessel is not bilge water.
- c) BOWTS Facility – Oily water and waste oil treatment facilities operated by Operator at Naval Base San Diego (NBSD), Naval Amphibious Base (NAB), and Naval Base Point Loma (NBPL).
- d) Declaration of Inspection (DOI) – A checklist documenting that all components necessary to properly conduct a transfer of oily waste have been inspected prior to the transfer and have been found in acceptable condition for use during the transfer. The DOI uses different forms (Facility, Truck/Mobile Equipment, and Vessel) depending on the nature of the transfer conducted.
- e) FPIC – The FPIC is the operator in control of the shoreside collection system from the pier OW riser to the treatment system. The tanker truck operator acts as the FPIC under scenario 3d.
- f) IWTP – Industrial Waste Treatment Plant operated by Operator at NBCNI.
- g) LOGREQ – Logistics request from vessel for shoreside services.
- h) NAB – Naval Amphibious Base Coronado (currently known as Naval Base Coronado Amphibious Annex).
- i) NBCNI- Naval Base Coronado North Island (formerly known as Naval Air Station North Island (NASNI))
- j) NBSD (Naval Base San Diego (formerly known as Naval Station San Diego (NAVSTA))
- k) Waste Oil – Oil of any kind or in any form including, but not limited to, petroleum, fuel oil, oily sludge, oil refuse, and oil mixed with waste.
- l) Oily Waste – Oil mixed with water or other fluids. Typically, bilge water and compensation water are considered oily waste. Refer to IWOW-020 for oily waste acceptance criteria.
- m) Operator – The party holding operational control over oily waste collection and treatment facilities in San Diego, also referred to as Operator.
- n) ORP – Oil Recovery Plant at NBCNI.
- o) Operator – Under contract to operate and maintain the BOWTS facilities at NBSD, NBPL, and NAB, and IWTP/ORP at NBCNI.
- p) NBPL – Naval Base Point Loma (formerly known as Submarine Base (SUBASE))
- q) SUBRON 11 – Submarine Squadron Eleven.
- r) Tanker Truck – Refers to contractor tanker trucks that contain oily waste transferred from a vessel.

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- s) Vessel – Refers to any ship, barge, submarine, or aircraft carrier.
- t) VPIC – Vessel Person in Charge is the person in control of the vessel portion of a transfer of oily waste from a vessel to the pier OW riser or tanker truck.

## 5. PROCEDURE

### 5.1 General

The following Federal and State requirements apply to all vessel personnel, facility operators, and contractors involved with oily waste transfer operations to shoreside under the scope of this SOP:

- a) A VPIC and a FPIC must be identified during the planning phase of the OW transfer.
- b) Continuous two-way communication between the VPIC or designee and the FPIC must be maintained throughout the oily waste transfer operation from when the radio is issued until the radio is returned unless in stand-by, then VPIC must check in hourly.
- c) Prior to commencing the transfer operation, a pre-transfer conference must be held between the VPIC and the FPIC at the plant (NBCNI, NBPL, or NBSD.)

The following requirements apply to all vessels and tanker trucks involved with oily waste transfer operations:

- d) VPIC personnel must be trained in accordance with Operator training procedures. ..
- e) DOIs are issued for one specific job. New DOIs must be completed daily for each vessel that is transferring OW.
- f) All pier OW risers, except the NAB piers are padlocked to preclude unauthorized discharges to the system and to serve as a control for potential leaking valves. Only, Ship-to-Shore is authorized to lock/unlock the risers. Ship to Shore has staff onboard from 0500 to 2100 hours on normal watch; any time after that is overtime. Ship to Shore staff can normally respond to a request within 15 minutes of the call, unless there is a lot of ship movement occurring. VPIC shall access the Ship to Shore services by phoning in a request via the Duty Desk at (619) 556-7349 or if a contractor is in need to pump to an OW riser a request for connect/disconnect will need to be submitted to the Duty Desk in person located at NBSD dry side, Bldg 270. VPIC shall provide the following information for the pier OW riser access: the base, the pier, the side of the pier (i.e. north or south), and the riser number or general location where to meet for the connection. If the VPIC does not have an established utility hook-up Job Order Number (JON), the VPIC shall establish this in advance with the NAVFAC Southwest Comptroller's Office. Their offices are located at NBSD wet side, Building 119, and the phone number is (619) 556-2234.
- g) The Ship-to-Shore staff will make the final hose connection to the pier OW riser. Hoses shall be suitable for OW service and shall be marked with the year of manufacture, MIL-H-20176F, maximum allowable working pressure, and the words "Oily Waste" as well as a yellow stripe.

### 5.2 Transfers Between Vessel to Pier OW Riser

#### 5.2.1 Prior to Transferring OW from Vessel to Pier OW Riser

- (a) Vessels request oily waste off-load connections via LOGREQ. For NBPL, SUBRON Eleven will arrange support.
- (b) The VPIC will also call Ship-to-Shore at (619) 556-1881 and arrange for personnel to provide OW hoses and take responsibility for connecting and (when complete) disconnecting the hose to the pier OW riser for all piers except at NAB. Through the connect/disconnect procedure.

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- (c) After the final transfer hose connections have been made a pre-transfer conference between VPIC and FPIC must be conducted. The conference will be conducted at the receiving facility's radio issue area. Refer to **Enclosures 5, 6, and 7** for the FPIC phone numbers at each facility. Prior to conference, hose must be verified to be properly wrapped.

The purpose of the pre-transfer conference is to ensure proper system alignment and readiness, review of communications procedures, discuss DOI requirements and any FPIC restrictions. The VPIC will complete their portion of the DOI prior to the pre-transfer conference. The VPIC will then bring the DOI to the FPIC who will complete filling out the DOI during the Pre-transfer conference. At a minimum, the VPIC will provide the following information:

- 1) Vessel name
  - 2) Number of pier OW riser
  - 3) VPIC name
  - 4) Estimated date and time OW transfer will start
  - 5) Product type (profile, percentage oil/fuel)
  - 6) Estimated volume
  - 7) Estimated length of time required to pump
  - 8) Maximum transfer rate and pressure
  - 9) Emergency procedures, including shutdown
- (d) After the pre-transfer conference is completed the VPIC will be issued a radio to be used during the transfer. Continuous two-way communication between the VPIC or designee and the FPIC must be maintained throughout the oily waste transfer operation from when the radio is issued until the radio is returned, VPIC must check in hourly.
- (e) Upon return to the OW riser the VPIC or designee will stand watch at the pier OW riser connection for the duration of the OW transfer.
- (f) As part of the pre-startup check, the in-line filter, downstream flow meter, and air diaphragm shall be calibrated and checked for proper operation. Any debris from the in-line filter should be disposed of in the OWTF drum, except for Ship's Force
- (g) The VPIC or designee will request permission from the FPIC to begin transfer. Once the FPIC grants permission the transfer may commence.

#### 5.2.2 During Transfer of OW from Vessel to Pier OW Riser

- (a) The VPIC will ensure adequate personnel are available to ensure pumping can be secured within 30 sec in case of a spill or other emergency.
- (b) FPIC will perform random inspections to confirm compliance with this SOP and regulations.
- (c) Personnel assigned to the transfer operation will monitor the hoses and connections for any leaks. If a leak occurs, stop the pump immediately and close the riser valve and notify the FPIC.
  - 1) Vessel personnel shall respond to all spills occurring on the vessel, at the vessel-manned transfer connections, and within the riser containment, with spill containment kits either on the vessel or on the pier.

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- 2) Contractor personnel shall respond to all spills due to transfer operations on the pier and within the riser containment with spill containment kits located either with the contractor or on the pier. Ship's Force shall notify FPIC.
  - 3) Spills in the water shall be immediately reported to NBSD Central Oil Recovery at 556-8006 (effective 24 hours per day). Personnel shall take immediate safe action to contain, control, or mitigate spills until relieved by emergency response personnel.
- (d) Spills occurring at the BOWTS facility, the ORP pump lift stations, or the pipeline will be responded to by the FPIC and facility personnel.
  - (e) A completed copy of the DOI (Vessel or Contractor) (**Enclosures 2 and 4**) shall be in the possession of the VPIC.
  - (f) A new DOI (Vessel or Contractor) (**Enclosures 2 and 4**) is required per job. New DOIs must be completed daily for each vessel that is transferring OW.
  - (g) Pumping continues until complete or stopped due to an emergency. At the end of the vessel personnel or contractor shift, the pumping must be stopped and the radios turned in and reissued if further pumping is required. VPIC must have secured page and shutdown sheet checklist

#### 5.2.3 Shutdown of Transfer from Vessel to Pier OW Riser

- (a) Advise FPIC that transfer operations are complete.
- (b) Flush the lines with salt or potable water through riser for not less than 5 minutes.
- (c) Stop pump and shut pier OW riser valve.(Shut Down Sheet)
- (d) If the vessel is to get underway Ships Force will Contact Ship to Shore to have the transfer hose disconnected. Contractors shall fill out a disconnect chit with the duty desk to have transfer hoses disconnected once there job has been completed.
- (e) Remove residual liquid from pier OW metal riser containment and drip pans under hose connections.
- (f) Place all hose connections in pier OW metal riser containment if hose has been disconnected.
- (g) Remove from area any solid debris, trash, or rags created by transfer operations and dispose of in proper containers.
- (h) Complete Shutdown Checklist (**Enclosure 8**).
- (i) Return the radio and completed Shutdown checklist to the issuing facility. FPIC shall ensure radio is working properly

### END OF PROCEDURE FOR TRANSFER OF OW FROM VESSEL TO PIER OW RISER

#### 5.3 Transfers Between Vessel to Tanker Truck

##### 5.3.1 Prior to Transferring OW from Vessel to Tanker Truck

- (a) Vessel request oily waste off-load connections via LOGREQ. For NBPL, SUBRON Eleven will arrange support.
- (b) The VPIC will also call Ship-to-Shore at (619) 556-1881 if OW hoses are required. Ship-to-Shore staff can normally respond to a request within 15 minutes of the call, unless there is a lot of ship movement occurring.

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- (c) Tanker trucks will be allowed on the pier only after Operator has determined that the waste cannot be transferred via a pier OW riser. Generally the reasons for the tanker truck to enter the pier are:
- 1) The flow rate is too great for the pier OW riser to handle. These tanker trucks will discharge to the BOWTS Facility or ORP.
  - 2) The liquid waste has characteristics that cannot be accepted for treatment at the BOWTS. However, it may be possible to treat this waste liquid at the IWOW IWTP.
  - 3) Pressure washers used for tank cleaning are mounted on a tanker truck. In this circumstance the tank will contain a mechanical seal to ensure no liquids are pumped into the tanker truck.

If Operator determines that the tanker truck should be allowed on the pier based on the above conditions, then continue with the procedures in this section.

- (d) The tanker truck operator shall pick up a waste acceptance form (WAF) (**Reference d**) prior to or during the pre-conference meeting. The tanker truck operator is responsible for providing information to complete the applicable portions of the WAF prior to the delivery and transfer of OW to the BOWTS or ORP. This will include the disclosure of information necessary to identify and characterize material transfer to the treatment systems. To schedule and disclose information, call the Operator schedule desk at (619) 954-5396 between 0600 and 1400, Monday through Friday. Additional lead time is required for scheduling if information is submitted on weekends.
- (e) The tanker truck operator will act as the FPIC.
- (f) To enter the pier, tanker trucks must have a DOI (Truck) form (**Enclosure 3**) visible on the dashboard, and a WAF (**Enclosure 9**).
- (g) A pre-transfer conference between VPIC and FPIC must be conducted after the final hose connection to the tanker truck.

The purpose of the pre-transfer conference is to ensure proper system alignment and readiness, review communications procedures, and discuss DOI requirements and any FPIC restrictions. The VPIC will complete the pre-transfer-conference related items of the DOI and **Enclosure 3** prior to the pre-transfer conference. At a minimum, the VPIC will provide the following information:

- 1) Vessel name
- 2) VPIC name
- 3) Estimated date and time OW transfer will start
- 4) Product type (profile, percentage oil/fuel)
- 5) Estimated volume
- 6) Estimated length of time required to pump
- 7) Maximum transfer rate and pressure
- 8) Emergency procedures, including shutdown

The VPIC designee and tanker truck operator will be cognizant of the current transfer operation and have been trained in accordance with Operator training procedures.

- (h) The VPIC and the FPIC will complete the DOI (Truck) during the pre-transfer conference.

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- (i) Hoses shall be suitable for OW service and shall be marked with the year of manufacture, MIL-H-20176F, maximum allowable working pressure, and the words "Oily Waste." And Yellow Stripe
- (j) VPIC will inform FPIC when transfer commences.

#### 5.3.2 During Transfer and Shutdown of Oily Waste from Vessel to Tanker Truck

- (a) VPIC and FPIC (tanker truck operator) shall maintain continuous two-way communication during transfer operations, VPIC must check in hourly.
- (b) Personnel assigned to the transfer operation will monitor the hoses and connections for any leaks. If a leak occurs, stop the pump immediately and close valve. Notify the VPIC, FPIC and PWC immediately. Follow notification procedures provided in **Reference C**.
  - 1) Vessel personnel shall respond to all spills occurring on the vessel, at the vessel-manned transfer connections, and on the pier, with spill containment kits either on the vessel or on the pier
  - 2) Contractor personnel shall respond to all spills due to transfer operations on the pier with spill containment kits located either with the contractor or on the pier
  - 3) Spills in the water shall be immediately reported to NBSD Central Oil Recovery at 556-8006 (effective 24 hours per day). Personnel shall take immediate safe action to contain, control, or mitigate spills until relieved by emergency response personnel
- (c) FPIC advises VPIC or designee that transfer operations are complete to tanker truck. If multiple tanker trucks are involved, then repeat transfer procedures.
- (d) Prior to shutdown or disconnecting hose for next tanker truck, blow down the transfer hose at a pressure not greater than 15 pounds per square inch or flush the hose with salt water to the tanker truck for not less than 5 minutes.
- (e) Stop pump and shut appropriate valves.
- (f) The VPIC will also call Ship-to-Shore to disconnect hoses and install protective caps on hose and tanker truck to minimize spills.
- (g) Remove residual liquid from drip pans under hose connections.
- (h) Remove from area any solid debris, trash, or rags created by transfer operations and dispose of in proper containers.

#### 5.4 Transfers from Tanker Truck to the BOWTS Facility or ORP

- a) If the contractor is transporting the tanker truck contents off site, then skip this section; otherwise continue.
- b) Prior to entering the BOWTS Facility, IWTP, or ORP, contractor must complete a WAF (**Enclosure 9**) and provide a profile reference or analytical data characterizing the tanker truck contents. See SOP IWOW-022 for instructions for completing the WAF. If the tanker truck is transferring to a BOWTS or ORP requiring travel on public roads, then the tanker truck must meet all DOT regulations, including providing a manifest.
- c) Contractor will provide a copy of the completed DOI (Truck) (**Enclosure 3**).
- d) Operator personnel will determine if it is acceptable to treat the waste at any of the Operator facilities.
- e) If acceptable, the contractor will assist Operator in completing a DOI (Facility) (**Enclosure 4**).

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- f) The contractor will transfer the tanker truck contents to the facility in the unloading area after completing a Hydrochlor or Chlordetect test to determine waste acceptability..

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# Standard Operating Procedure IWOW-004

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## TITLE: Industrial and Oily Waste Treatment Systems Operations Checklists

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**Reference:** (a) California Health and Safety Code  
(b) California Code of Regulations, Title 22  
(c) Code of Federal Regulations, Title 40

**Enclosures:** (1) NBPL Processing Checklist (CL-1)  
(2) NBPL Daily Checklist (CL-2)  
(3) NBSD Processing Checklist (CL-3)  
(4) NBSD Daily Checklist (CL-4)  
(5) NBCNI Daily Checklist (CL-5)  
(6) NBCNI OW Processing Checklist (CL-6)  
(7) NBCNI IW Processing Checklist (CL-7)  
(8) NAB Processing Checklist (CL-8)  
(9) Stand-By NBCNI IAF Operations Checklist (CL-9)  
(10) NBPL BOWTS Daily Checklist (CL-10)

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### 1. PURPOSE

To provide forms and guidance on the start-up, shutdown, and processing operations at all IWOW facilities.

### 2. ACTION

This procedure applies to Operator IWOW personnel.

### 3. QUALIFICATIONS AND TRAINING REQUIREMENTS

At a minimum, all staff responsible for implementing work covered by this SOP must read and understand contents, and sign training documentation in accordance with SOP IWOW-051.

### 4. PROCEDURE

1. The Bilge and Oil Waste Treatment System (BOWTS) operate under hazardous waste laws and regulations for operating a fixed treatment unit (FTU). The Industrial Waste/Oily Waste (IWOW) facility operates under hazardous waste laws and regulations for permitted facilities. The laws and regulations dictate several administrative and technical operating requirements including record keeping requirements and a written inspection schedule.
2. Specific information on the equipment and processing operations can be found in the technical manuals for equipment and SOPs for each facility. To supplement these instructions, and provide the most current developments for Operators, written checklists for daily duties, start-up, shutdown, and processing are provided as **Enclosures 1** through **10**.
3. Completed checklists are to be reviewed by the Lead Operator and then filed with the Daily Inspection Reports at the end of each shift or when the checklist has been completed.

4. **Enclosures 1** through **10** are used as guidance for operations and are not to be used without prior training and experience in the operation of the facilities. The checklists are not a substitute for proper on-the-job training.
5. Whenever there are significant changes in the operation of the facilities this Standard Operating Procedure is to be updated as soon as practicable. Modifications of checklists and forms or SOPs are to be made in accordance with SOPIWOW-001. Prior revisions of this document and checklists are to be retained in the version history of the project website.

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# Standard Operating Procedure IWOW-005

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## TITLE: Waste Flow Log Records

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**References:** SOP IWOW-051, "Industrial Waste/Oily Water Services Personnel Qualification and Training."

**Enclosures:** (1) NBSD Daily Flow Log (OP-10)  
(2) NBCNI Daily Flow Log (OP-10NI)  
(3) NBPL Daily Flow Log (OP-10SB)  
(4) IWTP/ORP Waste Flow Log (OP-4)  
(5) NBPL Waste Flow Log (OP\_17)  
(6) NAB Waste Flow Log (OP-18)  
(7) NBSD Waste Flow Log (OP-19)

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### 1. PURPOSE

To specify how to complete the waste flow log records for the facilities operated by Operators.

### 2. BACKGROUND/HISTORY

Operator is contracted to operate various waste facilities in the San Diego area. These facilities receive oily waste via pipelines from vessels connected to pier risers and from truck offloading connections.

### 3. ACTION

This procedure applies to IWOW personnel.

### 4. QUALIFICATIONS AND TRAINING REQUIREMENTS

At a minimum, all staff responsible for implementing work covered by this SOP must read and understand its contents and sign a Document Review Training Record (TR-10), in accordance with SOP IWOW-051.

### 5. PROCEDURE

1. Waste Flow Log (WFL): One portion of the billing information required for the IWOW facilities includes a Waste Flow Log, which provides various readings. These readings are indicated on the WFL and need to be documented on the log daily unless otherwise noted. When documenting the reading, copy the numbers indicated on the meter without adding the numbers that indicate a multiple.
2. WFL Review: A minimum of once per week, the facility Operator shall review the WFL for correctness and completeness, then sign and date the form. Any corrections or modifications made during this review shall be done in red-colored ink and initialed by the person conducting the review. The Operator shall fax the completed WFL to the Scheduler. The original shall be retained on site with other facility records, in the appropriate location.
3. Daily Flow Log (DFL): The waste received from vessels via the facility pipelines is documented on the DFL for billing purposes. When the vessel or contractor representative arrives to obtain a radio, an entry into the DFL will be made to show which vessel and contractor is involved. An

estimate of the volume to be received will also be documented on the DFL at this time. The START and STOP times will be annotated as they occur.

- a. When the vessel returns the radio or is finished for the day, the final volume pumped will be entered into the DFL. This volume is obtained from the vessel representative or direct observation of system information.
4. DFL Review: At the end of the calendar day, the DFL will be reviewed for accuracy and completeness by the on-watch Operator. The completed log will be faxed or handed to the IWOW Scheduler. Any discrepancies will be addressed prior to forwarding the DFL to the IWOW Scheduler. The original DFL will be retained at the facility.
5. Revision: Within one month of any significant change, this Standard Operating Procedure is to be updated by the IWOW Manager or delegated individual per Guideline IWOW-001. Changes in the attached forms may be made by the IWOW Manager and placed into service without revising this procedure. Prior revisions of this document and forms may be retained in the project website version history for future reference or legal purposes.

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## Standard Operating Procedure IWOW-006

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### TITLE: Industrial Waste and Oily Waste (IWOW) Treatment Facility Inspections

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- References:**
- (a) California Health and Safety Code, Chapter 6.5, Section 25200.3
  - (b) California Code of Regulations, Title 22, Chapters 14 and 15
  - (c) 40 CFR Parts 260 et seq.
  - (d) Department of Toxic Substances Control Division (DTSC) Guidance Document for Inspection Schedules and Logs (See Encl. 35)
  - (e) RCRA Hazardous Waste Facility Permit (97-SC-002)
  - (f) Hazardous Waste Treatment Unit Specific Notification to Cal-EPA DTSC; Tiered Permit facility permits H80650-NBSD; H80563-NAB; H81078-NBPL
  - (g) COMNAVREGSWINST 5090.1 C
  - (h) Naval Facilities Engineering Command (NAVFAC), Navy Crane Center, Publication P-307, Management of Weight Handling Equipment, June 2003.
  - (i) 29 CFR, Chapter XVII, Part 1910
  - (j) SOP IWOW-018 Emergency Diesel Generator Inspection and Testing
  - (k) Raychem Trace Tech TTDM Operating Manual
  - (l) Permalert AT Operating Manual
  - (m) NAIT Operating Manual
  - (n) San Diego Regional Oily Waste Transfer Manual

- Enclosures:**
- (1) Facility Inspection Schedule (INSP-16)
  - (2) NBCNI IWTP/ORP Facility Daily Operator Log (OP-1)
  
  - (4) NAB BOWTS Daily Operator Log (OP-8)
  - (5) NBSD OWTF Log Report (OP-11-1, OP-11-2, OP-11-3)
  - (6) NBPL OWTF Daily Operator Log (OP-3)
  - (7) Combined Industrial Waste/Oily Waste Treatment Plant Daily Facility Inspection Log(INSP-1)
  
  - (9) NAB Daily Facility Inspection (INSP-13)
  - (10)NBSD OWTF Daily Facility Inspection (INSP-7)
  - (11)NBPL OWTF Daily Facility Inspection (INSP-10)
  - (12)NBCNI Pump Station Inspection (INSP-29)
  - (13)NBCNI ORP Daily Riser Inspection (INSP-23)
  - (14)NBSD Pump Station Inspection (INSP-17)
  - (15)NBCNI/NAB Leak Detection Inspection (INSP-19)
  - (16)NBSD Leak Detection Inspection (INSP-20)
  - (17)IWTP/ORP Weekly Facility Inspection (INSP-5)
  - (18)NAB Weekly Facility Inspection (INSP-14)
  - (19)NBSD Weekly Facility Inspection (INSP-8)
  - (20)NBPL Weekly Facility Inspection (INSP-11)
  - (21)IWTP/ORP Monthly Facility Inspection (INSP-6)
  - (22)NAB Monthly Facility Inspection (INSP-15)
  - (23)NBSD Monthly Facility Inspection (INSP-9)
  - (24)NBPL OWTF Monthly Facility Inspection (INSP-12)
  - (25)ORP Daily Effluent Results (OP-12)
  - (26)NAB Best Management Practices (OP-16)
  - (27)NAB and NBPL Off-Site Hourly Readings (OTH-41)Form Consolidated with (OP-20)
  - (28)NBSD Daily Effluent Results (OP-14)

- (29) NBSD Daily Riser Inspection (INSP-18)
- (30) NBPL Best Management Practices (OP-15)
- (31) IWTP Spill Equipment Checklist (CL-22)
- (32) Maintenance Request Form (OP-9)
- (33) Sacrificial Anode Inspection (INSP-21)
- (34) Trace-Tek Annual Inspection/Certification for 32<sup>nd</sup> Street (OTH-87)
- (35) DTSC Guidance Document for Inspection Schedules and Logs (OTH-86)
- (36) Leak Detection Report – Maintenance Request Form (OP-33)
- (37) Leak Detection System Testing and Certification List – EXHIBIT (INSP-24)
- (38) Anode Inspection List - EXHIBIT (INSP-26)
- (39) Instrument Testing List – EXHIBIT (INSP-27)
- (40) WHE Inspection and Certification Table (WHE Table removed - Only Hoists and portable A –frame type equipment will be tested on an as needed basis.)
- (41) Check-Off List for Pipeline Air Bleed Valve Procedures (OTH-09)
- (42) Facilities Levels – NBCNI – Pump Stations and Off-Site Hourly Readings (OP-20)
- (43) NBCNI Daily Product Chemical Inventory Check (OP-13)
- (44) NBCNI Daily Meter Readings (OP-22)
- (45) Leak Detection Alarm Response Log (OP-23)
- (46) Facilities Levels – NBSD - Pump Station (OP-43)
- (47) PPE Requirements for Specific Operations/Tasks (OTH-01)
- (48) Chemical Receipt Chain of Custody (SF-16)
- (49) Receipt Inspection Report (INSP-02)
- (50) Maintenance Request Form Log (OP-47)
- (51) Leak Detection Maintenance Request Form Log (OP-48)
- (52) NBPL OWTP Daily Facility Inspection Log (INSP-10)

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## 1. PURPOSE

To provide forms and guidance concerning the multiple facility inspections for all IWOW facilities and any successor contracts.

## 2. BACKGROUND/HISTORY

### 2.1 Background

The IWOW facilities are regulated as hazardous waste treatment facilities and have inspection, repair, and maintenance requirements specified per **references (a) through (e)**. The Naval Base Coronado North Island (NBCNI) facility operates under a full RCRA hazardous waste treatment permit per **reference (e)**, while the Naval Base San Diego (NBSD), Naval Base Point Loma (NBPL), and Naval Amphibious Base (NAB) Bilge and Oily Waste Treatment Systems (BOWTS) are Non-RCRA hazardous waste treatment facilities which operate under a grant of Conditional Authorization (CA) under the Tiered Permitting Program, per **reference (f)**. One requirement for all facilities is to maintain a written inspection schedule & log of inspections.

### 2.2 Program Overview

The Operator IWOW Operators shall conduct inspections at their respective facilities in accordance with the Facility Inspection Schedule INSP-1 (see **Enclosure 1**). The Operator(s) shall annotate the results of the inspections on the appropriate inspection forms. Discrepancies found during inspections shall be managed in accordance with guidelines established in this SOP, which requires the generation of a Maintenance Request Form (MRF) OP-9 (**Enclosure 32**) for items that cannot be corrected at the time of identification, or during the shift or require outside resources (e.g., Navy contracts approval/task order, Operator securing a subcontractor, obtaining parts that are not on hand). For Leak Detection discrepancies, a Leak Detection Report – Maintenance Request Form (OP-33) (LDR-MRF) (**Enclosure 36**) will be used. Forms and guidance regarding facility start-

up/shut-down and waste flow tracking procedures shall be managed in accordance with SOP IWOW-004 and IWOW-005, respectively. Additional guidance regarding inspection/operation forms is also provided in **reference (n)**, the San Diego Regional Oily Waste Transfer Manual.

### 3. ACTION

This procedure applies to Operations Personnel.

The primary responsible parties include the Project Manager, IWOW Manager, Operations Officer, NBSD/NBPL Supervisor, and NBCNI Lead Operator. The IWOW Manager is responsible for ensuring that budgeting and resources are provided to accommodate the inspection work. The Operations Leadership (Manager, Operations Officer, Supervisor, Lead Operator) are responsible for ensuring that all inspections are performed in accordance with this Standard Operating Procedure, that sufficient documentation is established and maintained readily available, and that enclosures are periodically updated. The IWOW Leadership and the Quality Control Manager are responsible for providing quality assurance and control regarding the inspection work. The Operations Officer, Supervisor, and/or Lead Operator will delegate the actual work to the Operations staff and will periodically hold training sessions to review, refresh, or train staff on ensuring proper usage of the operations and inspection forms. The IWOW Leadership will consult with the Commander Navy Region Southwest (CNRSW) Environmental Compliance Program to ensure the Standard Operating Procedure, the forms, the checklists and the record or other required reports comply with the current minimum regulatory requirements.

### 4. QUALIFICATIONS AND TRAINING REQUIREMENTS

At a minimum, all staff responsible for implementing work covered by this SOP must read and understand its contents and sign training documentation in accordance with SOP IWOW-051. Additionally, personnel shall be trained by a supervisory personnel or a Qualified Operator to conduct the inspection/activity at least once prior to conducting the inspection/activity unsupervised.

### 5. PROCEDURE

#### 5.1 Applicability

This SOP applies to IWOW and BOWTS Operations for documentation of inspections and activities required by regulations, permits, Navy requirements and internal company policies. This SOP supplements SOP IWOW-002, entitled, Routine and Scheduled Maintenance for Industrial and Oily Waste Treatment Plants.

For operators not previously involved in this operation they shall, at a minimum, review the PPE requirements on **OTH-01**.

#### 5.2 Document Control & Retention

A schedule of operating and inspection logs required by regulations is provided as **Enclosure 1**. Each of these forms is considered a controlled document and the remainder of this Standard Operating Procedure will provide the detailed guidance on the content expected when completing each document. Completed inspection forms are to be filed with the daily/shift reports at the end of the day/shift. Inspection documentation will be maintained in accordance with regulatory requirements (typically at least 3 years). Note that certain inspection related documents (e.g., P.E. Certifications, outside vendor inspections/certifications) may be maintained at Project Offices located at different bases. These documents will be made available to agencies and other personnel authorized to access the documents as requested.

Whenever there are significant changes in the operation of the facilities this Standard Operating Procedure is to be updated within one month of a change. Changes in the documentation forms may

be made by authorized supervisory/management and placed into service without revising this procedure. Prior revisions of this document and checklists are to be retained on the project website for future reference.

### 5.3 General Instructions for All Inspection Forms

- a) Print all data in a legible manner.
- b) The inspector name, date and time of inspection are to be included on the inspection documentation. NOTE: this is a regulatory requirement for inspection documentation required by regulation or permit.
- c) In addition to the instructions contained in this SOP, follow specific instructions and guidance listed on the enclosure document (i.e., CL, INSP, OP and OTH forms).
- d) Inspected: Check or initial to annotate that the Item has been inspected.
- e) If a problem is found, a brief description of problem(s) found and the date and nature of repairs are to be noted on the inspection form. This notation may be in the form of an MRF or LDR-MRF as described below.
  - A Maintenance Request Form (MRF) (**Enclosure 32**) is to be generated for discrepancies that cannot be corrected at the time of identification, or during the shift or require outside resources (e.g., Navy contracts approval/task order, Operator securing a subcontractor, obtaining parts that are not on hand). The MRF will be submitted to the Site Supervisor or Lead Operator, who will enter the information into Maximo and generate a Work Order number (WO#). The WO number shall be annotated in the appropriate location on the Inspection Form and the Maintenance Request Form Log (**Enclosure 50**). Leak Detection System discrepancies will be managed in accordance with Section 5.7 and will use the Leak Detection Report –Maintenance Request Form (LDR-MRF) (**Enclosure 36**) not the MRF (OP-9).
  - WO#: Write the WO# which is assigned to the discrepancy on the inspection form.
  - When the corrective action is completed, the work is to be documented on the MRF/LDS-MRF and a notation of work completion is to be made on the last inspection report. The notation on the form may be "Work completed see MRF for details" or actually identify the date and nature of repairs on the inspection form.

### 5.4 Shift Activity and Status Logs

#### 5.4.1 Instructions

- a) Shift activities and annotated readings are to be documented in the appropriate log, checklist, inspection or other form on each shift as required. Appropriate notations on documentation and notification to supervisory personnel are to be made if a required log, inspection or reading is not conducted as required.
- b) Any notations in the log should be accompanied with a time.
- c) At the beginning of the shift a facility status should be placed in the comments area including at a minimum the following:
  1. Processing system status.
  2. Sludge press operational status.
  3. Lead LET levels.

4. Oil skimming status including lead tank.
  5. Any contractors or visitors on site.
  6. Any in place contingency plans for the day
- d) At a minimum the Operator shall include the following routine items as comments on these logs:
1. A summary of any load received by noting the activity name, waste acceptance form number, manifest number (if accompanied by a manifest), and volume.
  2. A summary of any recovered oil shipped off-site including the volume, bill of lading number, and transporter.
  3. Oil skimming start and stop.
  4. Sludge/Scum start and stop, including the unloading of a sludge press.
  5. Any field analysis performed, including the shift effluent analysis during processing.
  6. Visitor/Guest information, including contractors, with name, company, and check-out time  
Processing start and stop.
- e) Unusual items, unique incidents, alarms, and emergencies are also required to be recorded in this log. Examples of these include, but are not limited to:
1. The sudden development of operational deficiencies such as alarms, broken equipment, tank overflows, small contained spills, nuisance odors, etc.
  2. Strange or abnormal alarm conditions noted on the Wonderware Screen.
  3. Unmanifested loads or loads not containing proper transportation paperwork (Land Disposal Restriction Notification/Certification).

## 5.5 Daily Facility Inspections

In addition to the General Instructions given in section 5.3, complete daily inspections in accordance with the following instructions.

### 5.5.1 Form Instructions

- a) The inspection form categorizes the equipment/conditions to be inspected and provides a list of the physical areas (Items) to be inspected. Document the inspection, any deficiencies found and corrective actions as directed on the inspections on the inspection form itself.
- b) Item Description: Write a brief description of the issue or unsatisfactory condition.

### 5.5.2 Inspection Instructions

Use the following as guidance when inspecting each area listed on the daily inspection forms for each facility (**Enclosures 7, 9, 10 and 11**):

- a) Spill Containment Facilities – Sumps and Berms including loading and unloading areas: Inspect berms, sumps, and other containment elements for unsealed cracks or gaps in the finish surface. Ensure that containment facilities are not broken or deteriorated and are free of standing liquid (including Petroleum, Oil, Lubricants (POL), and oily wastewater). If spilled or leaked waste, or precipitation are observed within the containment area, the operator shall remove the spilled or leaked material and accumulated precipitation from the sump or collection area within 24 hours or in as timely a manner as is necessary to prevent overflow of the collection system. If the collected material is a hazardous waste, the operator shall manage the material as a hazardous

waste in accordance with Title 22, Chapters 12 through 16. Remove solids and debris inside the sumps and berms.

Note: Upon discovery of Hazardous Material spills, the operator will initiate clean up immediately. De minimus liquids in low spots such as puddles, condensation and inconsequential rain accumulation will be a secondary priority. If the operator is not able to remove these liquids during the shift justification shall be noted in the operator's log

If a spill or leak is observed within the secondary containment of the areas the operator shall notify the lead operator and perform the following:

- **Initiate Mitigation Procedures:** The procedures used to mitigate a spill or leak are as follows: (1) cease operations and control further spread of leak or spill with dikes or berms; (2) control the source of the leak; (3) clean up and containerize spilled material using absorbent, neutralizer, or coagulant, as necessary.
  - **Inspect System to Determine Cause:** Conduct a detailed inspection of facility equipment to pinpoint the cause of the spill or leak and to safeguard against further incidents including leaks, pressure buildup, gas generation, and the rupture of pipes, valves, or other equipment.
  - **Initiate Waste Removal Procedures:** Remove waste from secondary containment areas (or other affected areas). Conduct a visual inspection of the spill or leak as directed by the supervisor or designee. Control further migration of the release through the use of berming materials and sorbents; remove wastes in accordance with appropriate hazardous waste management procedures.
  - **Contingency Plan:** Spills and leaks of hazardous materials in secondary containment and hazardous material spills and leaks controlled on site are not considered releases. As such, spills and leaks of this nature do not necessarily activate the contingency plan and may not be subject to the notification requirements outlined in 22 CCR 66264.56 (NBCNI) & 66265.56 (NAB, NBPL, NBSD).
  - **Conduct Repair:** Prepare a Maintenance Request Form in accordance with Section 5.3 to initiate the repair action as necessary.
- b) Tanks and Systems: Visually inspect all tanks and pipelines for evidence of corrosion and leakage. Inspect tank level indicating equipment to for proper operation. Inspect the tank appurtenances and the area immediately surrounding the externally accessible portion of the tank system, including secondary containment structures for conditions (sat/unsat) or signs of release of contents.
- c) Piping & Valves – Check pipes and valves for leaks, deterioration or corrosion.
- d) Equipment: Check all process and other equipment for malfunctions and leaks. If operating verify proper functioning during use.
- e) Container Storage Areas: The container storage areas include the IW Filter Press Bin, ORP Filter Press Bin, and the storage area adjacent to the ORP and IW Filter Presses (bin storage areas). Inspect the container storage areas on a daily basis. Check the condition of each container for damaged seals, leaks, or free-standing liquids. In the event damaged conditions are found, document container repair requirements on the inspection form and prepare a Maintenance Request Form (MRF). Document the number of containers and the quantity of material in each container on the inspection form **Enclosure 7** (INSP-1). At no time will permit mandated storage requirements (e.g., space, position) be compromised to allow storage space for equipment or other non-permit regulated items. The operators will confirm on a daily basis that the total volume of waste material containers does not exceed the maximum allowable storage capacity of four 14.2 CY bins. The permitted storage limits for each bin storage area are:

- Industrial Waste Filter Press: One 14.2 CY bin or equivalent volume of containers
- Oily Waste Filter Press: Two 14.2 CY bin or equivalent volume of containers
- Bin Storage Area (behind Building 788): Two 14.2 CY bin
- Bin Storage Area (adjacent to the IW Press): One 14.2 CY bin

NOTE: During tank maintenance and cleaning activities the bin storage area behind 788 is permitted for operating capacities of either 365 Drums (55 Gal capacity), or 130 triwalls, or a 4500 gallon capacity truck plus 165 drums, plus 78 triwalls.

The maximum storage time for sludge in the bin storage/container area (prior to off-site removal) is based on the accumulation start date of the batch being treated, for no longer than 90 days at NBSD and NBPL BOWTS and up to one year at the IWOW.

## 5.6 Pump Station Inspection

### 5.6.1 Form Instructions

- a) Document the inspection as noted on the inspection form (i.e., fill in information as requested, checkmark for a satisfactory (SAT) condition and an "UNSAT" for an unsatisfactory condition or other information as noted on the form).
- b) Discrepancies will be annotated in the comments area with the assigned WO number as necessary in accordance with Section 5.3 above.
- c) Readings will be printed legibly from the indicated meter/indicator.

### 5.6.2 Inspection Instructions

Use the following as guidance for conditions or status for each item listed on the inspection form.

- a) Visually inspect all piping for leaks, corrosion, and damage that may cause a failure.
- b) Wet Well Level: Annotate level and ensure it is within operational set points.
- c) Vaults and Sumps: Inspect vaults, sumps, and other containment for unsealed cracks or gaps in the containment. Ensure that containment facilities are not broken or deteriorated and are free of standing liquid (including POL, and oily wastewater). Ensure that storm water accumulation is removed within 24 hours. Weekly inspection of vaults for standing liquids.
- d) Pump Op Check: Start pump in hand for 3-5 seconds to verify proper operation of the equipment. This is done weekly.
- e) Cooling Water Available: For equipment requiring cooling water, verify water is lined up and available to the equipment.
- f) Spill Equipment Available: Verify the site spill equipment is on-site and all required items are present.

### 5.6.3 Pump Station Surveillance

The operator will note satisfactory or unsatisfactory conditions at pump stations on the inspection form and prepare a Maintenance Repair Form or Leak Detection Report – Maintenance Request Form (Section 5.3 and 5.12) to document any operational discrepancies of the high level controls, automatic pump controls, leak detection alarms or other pump station system components in accordance with Section 5.3 and 5.12. The operator will also document the information in the operator's log. If the pump station discrepancies or operational deficiencies can cause a release to the environment, the operators will conduct the following during pumping operations:

- a) Communicate order to secure or cease pumping to all personnel with radios at piers feeding pump station if observed operational conditions jeopardize wastewater containment
- b) Notify Supervisory personnel and summon additional assistance for immediate response if needed.
- c) Observe the water-levels on the Control Panel every 120 minutes (minimum) to confirm that the pumps are operational and below the high-level condition.
- d) Inspect the Pump Stations supporting pier risers every two hours when pumping at the control center computers. Document levels on the appropriate form.
- e) Contact the VPIC and include in the DOI that the vessel reduce the pumping rate as required.

## 5.7 Leak Detection Inspection

The following section discusses the instructions for performing and documenting leak detection inspections, forms INSP-19 (NBCNI and NAB), INSP-20 (NBSD) and INSP-10 (NBPL). Any alarms that show leak at the control room computers located at NBCNI Bldg 788, NBSD Bldg 3588 or NBPL Bldg 2004 will be investigated immediately by the operator by either acknowledging the alarm and if warranted mobilization to the problem location (no later than two hours from the time the alarm is acknowledged) for further investigation per section 5.7.2). Operating manuals for leak detection systems are **Reference (k)**, **Reference (l)** and **Reference (m)**.

### 5.7.1 Form Instructions

On INSP-19 for NBC-NI and NAB, the comments section is used to indicate problems on the different panels located at these installations. For the Raychem TTDM panels, problem documentation would include the following type of information: length of cable to problem/moisture spot, current, break in line, and/or leak. For Permalert panels, problem documentation would include the following type of information: length of cable to problem/moisture spot, map status, faults, breaks or leaks and cable status.

On INSP-20 for NBSD, the readings are recorded and the comments section is filled out when problems arise. For the Raychem TTDM panels, problem documentation would include the following type of information: length of cable to problem/moisture spot, current, break in line, and/or leak. For the North American Industry Tech (NAIT) leak detection system, readings are taken at the individual panels located throughout the installation and noted in the comments section of the form for which manholes have issues that need further inspection.

On INSP-10 for NBPL, the comments section is used to indicate problems when discrepancies are observed.

### 5.7.2 Inspection Instructions

Use the following as guidance when inspecting each item listed on the inspection form. For discrepancies and problems identified in the leak detection system initiate a Leak Detection Report-Maintenance Request Form (LDR-MRF) **[Enclosure 36]** as specified in Section 5.3 above to document the issue.

- a) The operators shall immediately notify the Operator Leak Detection Specialist of any "break" and/or "leak" alarm conditions. The Leak Detection Specialist will be notified at the next working shift for a "service required" alarm.
- b) An abnormal reading is considered an alarm light, a break in cable, service required, or leak detected.
- c) The response to "routine", "urgent", or "emergency" service based on the panel alarm designation and detailed below:

- “Routine” service requires a response to the problem within 5 calendar days and targeted for resolution within 14 working days. A routine alarm is a condition that may require corrective action but does not impose an immediate threat to the environment or providing service. A “service required” message is considered a routine service call.
- “Urgent” service requires a response to the problem within 4 hours and targeted for resolution within 5 working days. An urgent alarm is a condition that requires corrective action with the potential of a threat to the environment or providing service. A “break” alarm is considered an urgent service call.
- “Emergency” requires a response to the problem immediately, no later than 2 hours from the time the call is received and work to resolve emergency continues until emergency condition is controlled or eliminated. An emergency alarm imposes an immediate threat to human health and the environment or providing service. A “leak” alarm is considered an emergency service call.

NOTE: The response and resolution to alarms will be evaluated for potential impact to human health and the environment. Alarm conditions may not be a result of a leak in the primary containment. A case in point, condensation in containment piping may accumulate at low points in the line and trigger an alarm. The Leak Detection Specialist evaluates alarms and determines course of action. The actions may include procurement of outside resources or other measures that will extend beyond the resolution timeframes specified above. This information will be included in Leak Detection Report – Maintenance Request Form (LDR-MRF) [Enclosure 36], the Leak Detection Maintenance Request Form Log (LDMRFL) [Enclosure 51], and the Leak Detection Alarm Response Log (LDARL) [Enclosure 45].

- Where continuous cables are located and liquid is de minimus volume (condensate and liquid removal is inaccessible) apply dehumidifier.
- Where float switches are located, open pull ports and remove liquids from containment area.

NOTE: If float switch is changed or removed for any reason, replace sensor to appropriate orientation (no impingement) so sensor operates. Do not consciously adjust the elevation of the sensor from where installed by instrumentation firm and certified by professional engineer.

- d) Alarms and abnormal readings are recorded in the Leak Detection Specialist’s log. If the alarm or abnormal condition cannot be resolved, a LDR-MRF for the discrepancy is to be initiated.
- e) The Operator Leak Detection Specialist will inspect the Leak Detection System and will perform the appropriate actions to address the alarm in accordance with this section and will note all pertinent information including description of discrepancy and date and nature of repairs on the LDR-MRF.

NOTE: other discrepancies or deficiencies not related to leak detection are managed in accordance with Section 5.12 Managing Inspection Conditions and Section 5.3 General Instructions for All Inspection Forms.

- f) Per Mr. Ken Stevens, TraceTek Field Service Technician, dated January 30, 2004 (see **Enclosure 34**), TraceTek Alarm and Locating Systems at each facility location shall be inspected at least once annually, thereby providing a thorough review of each system by factory trained personnel. Note: Per Ms. Christina Graulau, CNRSW Hazardous Waste Program Manager, in an e-mail to Operator dated March 18, 2005, the San Diego County Department of Environmental Health requested PWC to document the rationale for the facility to deviate from the O&M requirements. The Raychem O&M manual stated this testing and was to be done twice a year. However, PWC received the **Enclosure 34** e-mail indicating that once a year would be acceptable, given the existing leak detection response program. In addition to this system, the Permalert Leak Detection System at NBCNI is required to have annual manufacturer’s certification. A schedule of certification of the leak detection systems at NBCNI, NBSD, NAB, and NBPL is provided as **Enclosure 37**.

- g) Integrity Testing (i.e. dye testing, smoke testing, pressure testing of the primary or secondary containments, spark testing, among other techniques), will be triggered when there is a cluster of alarms that is abnormally high (i.e. 3x in a week or 6X in two months), or the volume of liquids removed from secondary containment is greater than 10 gallons.

## 5.8 Riser Inspection

### 5.8.1 Form Instructions

- a) Risers are positioned on Piers (and Quay wall) for transfer from vessels to land based facilities. All risers are subject to checks during "riser runs."

### 5.8.2 Inspection Instructions

Use the following as guidance when inspecting each item listed on the inspection form. Pier risers are included on the Pump Run Log for NAB, on the Pump Run Log for NBCNI, and on the Daily Inspection Forms for NBPL and NAB.

- a) Inspect each riser pan for free standing liquid and debris. Clean out as necessary.
- b) Rainwater should be removed from riser pans within 24 hours of last rainfall.
- c) Inspect riser piping for leaks and corrosion.
- d) Verify that riser/hose connection is wrapped
- e) Hoses connected to risers should be attached to a vessel or equipment likes pumps and valves. If a connected hose is not attached to a vessel of equipment, contact the ship to shore Duty Desk.

## 5.9 If a hose is connected to a riser with a valve open, where the ship is not pumping (i.e. no radio checked out), the operator will contact the Officer of the Deck (OOD) on the Quarterdeck and get in contact with the engineering crew representative and inform him of the discrepancy so that it will get corrected Weekly Facility Inspection

In addition to the General Instructions given in section 5.3, complete weekly inspections in accordance with the following instructions and instructions on the form itself.

### 5.9.1 Form Instructions

- a) Equipment #: Annotate the inspection item listed concerning the discrepancy.
- b) Each facility may have specific requirements to be performed. Perform these items as indicated on the inspection form.

### 5.9.2 Inspection Instructions

Use the following as guidance when inspecting each Item listed on the inspection form.

- a) Stored Waste Containers: Inspect containers (e.g., bins, drums, buckets) for damage; including holes, severe corrosion, or bulges. Check to ensure containers are properly labeled and that doors, lids, and bungs are securely in place. Check to ensure that ignitable wastes are properly grounded and transfer containers properly bonded.
- b) Communication Systems: Inspect the operation of telephones and two-way radios. Ensure availability of all required communication equipment. Perform radio checks with customers and the other IWOW facilities.

- c) Safety Showers/Eyewash Stations: Inspect safety showers and eyewash stations for access (a clear unobstructed path to station). Ensure required signage is posted and clearly visible. Remove any debris in the bowl (i.e. paper, gloves, etc.). Test the eyewash shower to ensure there is sufficient water flow through the system. Leave the protective caps on the eyewash to ensure there is enough water pressure to open the caps in an emergency. Replace the protective caps after test.
- d) Spill Clean-Up Equipment: Inspect to ensure that an adequate inventory is on hand (see Spill Equipment Checklist, CL-22 [**Enclosure 31**]). Ensure that required quantities of equipment and materials are available and in serviceable condition.
- e) Warning Signs: Ensure signs for eyewash shower, fire extinguisher, hazardous waste, and other safety sign is in good repair, legible and unobstructed. Ensure signs indicating tank contents are accurate, and contents or status of each batch tank is properly indicated on the tank and associated metal plating. Verify accumulation start dates on Recovered Oil Tank and consolidation containers are accurate.

## 5.10 Monthly Facility Inspection

In addition to the General Instructions given in section 5.3, complete monthly inspections in accordance with the following instructions and instructions on the form itself.

### 5.10.1 Form Instructions

- a) Equipment #: Annotate the inspection item listed concerning the discrepancy.

### 5.10.2 Inspection Instructions

Use the following as guidance when inspecting each item listed on the inspection form.

- a) Fire Extinguishers: Confirm full charge on all fire extinguishers on site and sign the inspection tag. Also ensure accessibility and proper markings of the extinguisher.
- b) Personal Protective Equipment (PPE): Verify personal and group PPE is in good condition with no tears or rips.
- c) Fire Alarm: Ensure any fire alarm on site is easily accessible and not damaged. For facilities without installed fire alarms, verify facility phone is operational and emergency numbers are posted.
- d) Sump Inspections: Verify the monthly inspections to clean all sumps have been completed within the last 30 days [**Enclosure 21, 22, 23, 24**].

## 5.11 Other Inspections

The following sections discuss other inspections performed according to the schedule indicated.

### 5.11.1 Effluent Results

Effluent results from in-house field sampling of oily waste processing will be recorded every time there is a discharge to the sewer connection and each shift during operation. The results will be annotated on the appropriate inspection report and the effluent results form. Conduct sampling every two (2) hours.

### 5.11.2 Generator Log Books

Each emergency generator will have a logbook located in the generator enclosure. Every time an emergency diesel generator run occurs, a notation shall be made in the respective unit's logbook. Ensure the notation includes whether the generator operated due to routine maintenance, an

unscheduled outage, or a scheduled outage that affected the unit. It shall be noted that allowing the emergency diesel generators to run during a scheduled outage is a violation of the San Diego Air Pollution Control District (APCD) permit. To prevent such an occurrence as a result of insufficient notice given to IWOW facility, IWOW operators shall inquire with the Outage Desk to determine if outages are scheduled. Insufficient notice to the affected IWOW facility of a scheduled outage shall be noted in the appropriate log book. Additional requirements for emergency diesel generator operation are specified in APCD Permits.

### 5.11.3 Anode Inspections

Sacrificial anodes installed in process equipment or tanks shall be inspected within the first six months of installation and annually thereafter, and annotated on the appropriate form [Enclosure 33]. The anode inspections will typically be scheduled and conducted as part of the preventative maintenance system established by Operator. An anode inspection tracking list for NBCNI, NAB, NBSD, and NBPL waste treatment facilities will be maintained and an example of the type of tracking form is provided as Enclosure 38.

### 5.11.4 Weight Handling Equipment (WHE) Inspections

Weight handling equipment is to be inspected by the operator at the time of use. WHE is to be checked for cracks, tears or other deterioration that might lead to decreased performance or failure. Defective or deteriorated equipment is to be removed from service. Only Hoists and portable A – frame type equipment will be tested on an as needed basis.

### 5.11.5 Instrument Inspections

In addition to daily inspections, spill prevention or overfill instruments installed in tank systems shall be evaluated and certified as specified in the Professional Engineer Certification for the system or tank. A list of instrument testing at NBCNI, NAB, NBSD, and NBPL waste treatment facilities will be maintained for tracking purposes and an example of the list is provided as Enclosure 39.

### 5.11.6 Miscellaneous Inventories and Readings

For smooth operations, additional inventories, readings and check will be made on a routine basis. These miscellaneous items include Daily Product Chemical Inventory (Enclosure 43), Daily Meter Readings (Enclosure 44) and Pump Stations and Off-Site Hourly Readings (Enclosure 42, 46). The list of Inspections, Readings, Inventories and Logs to be completed is included in the Facility Inspection Schedule. (Enclosure 1)

## 5.12 Managing Inspection Conditions

### 5.12.1 General

The IWOW Operators are responsible for conducting facility inspections for satisfactory (SAT) and unsatisfactory (UNSAT) conditions on a routine basis. During the routine facility inspections, the craft-labor and supervisor personnel are responsible for ensuring that any equipment malfunctions, deterioration, or abnormal operational conditions are identified, properly documented and corrected in a timely manner. The Operator must note the unsatisfactory condition on the appropriate documentation forms (see Enclosure List) and the Operator's Log. The Operator will inspect the finished work, record the nature of repairs, and initial and date the appropriate Facility Inspection Report as soon as the unsatisfactory condition is corrected.

- (1) Typical unsatisfactory conditions handled by the operator include items such as: re-priming pumps (excluding the main flow pumps), tightening leaking fittings, and removing debris or foreign objects that interfere with proper equipment operation (i.e., such as rags in rotary vacuum filter). The operator will note the actions taken in the daily log and will notify the lead operator to provide a status.

- (2) For unsatisfactory conditions which cannot be immediately corrected, or which require significant allocation of manpower, equipment, or budget, the operator will submit a Maintenance Request Form (MRF) (**Enclosure 32**).
- (3) Should a condition be noted that involves an actual or impending threat to health and/or the environment, the Operator will secure operations and call the Lead Operator and/or other management personnel as necessary to determine the appropriate course of action. If the condition poses an imminent threat to human health or the environment, the Operator is to initiate emergency notifications, clear the area, and stand-by as described in the Contingency Plan, to provide technical assistance to the Emergency Response Team.
- (4) ***In no case will the operator attempt to remedy a problem without trained assistance if he/she considers a significant risk to be involved.***

#### 5.12.2 Record Keeping

Records of inspections and documentation supporting deficiency corrections will be maintained in accordance with regulatory requirements, typically for at least three years. These records will be maintained at the facilities or at the central project location at the Hazardous Waste Facility on NBCNI or the Bilge and Oily Waste Treatment System (BOWTS) facility on NBSD.

#### 5.12.3 Maintenance Request Form

Operator shall maintain treatment facilities, ancillary equipment, lift stations, and pipelines. Maintenance shall include, but is not limited to, painting, repair and preventative maintenance of all tanks, ancillary equipment, pipelines, and other associated monitoring systems. In the event of a condition is encountered which require repairs, a maintenance request form (MRF) [**Enclosure 32**] will be initiated to identify the condition and to track the status. A tracking (WO) number will be assigned to monitor the condition and/or correction action. The Service Provider shall maintain the Industrial and Oily Waste Water Treatment Facilities with the preventative maintenance schedule for treatment facilities. The Service Provider shall provide routine repair action in a timely manner so as to provide uninterrupted service to the fleet, as practicable and feasible, urgent repair actions initiated within 24 hours and emergency repair action initiated immediately. Once the repairs are completed, the MRF will be closed and the WO will be completed. Issues and problems identified with the leak detections systems will be addressed and documented as detailed in Section 5.7.

### 5.13 Receiving Chemicals and Equipment

#### 5.13.1 Chemical Receipt Chain of Custody

When receiving bulk chemicals at NBSD, NBCNI, and NBPL the receiver (Operator) must fill out a Chemical Receipt Chain of Custody (COC) (**Enclosure 48**). The receiver must fill out the shipping company name, chemical delivered, quantity, date and time delivered, and who received the chemicals. The COC and the delivery receipt will then be given to the scheduler who will in turn take both documents over to the HAZMAT center. The scheduler will sign as the Relinquished by, date and time, and have the designated SERCO representative sign and date as Received by. The COC will then be filed with the purchasing requests and our copy of the receipt in the scheduler's office.

#### 5.13.2 Equipment Inspection

When receiving equipment the receiver (operator) must fill out a Receipt Inspection Report (RIR) (**Enclosure 49**). It is important that the equipment or packaging is examined for any visible signs of damage, if there are any visible signs of damage note on the RIR and the bill of lading before signing. If the carton is damaged then note "possible concealed damage" beside description of damage. Have the driver sign as witness to the condition and if unit is visible damaged refuse delivery. Do not

discard any cartons or packing materials until the unit is functioning properly. RIRs are to be turned into procurement staff. Equipment inspections requiring the completion of a RIR must be conducted prior to the departure of the delivery driver. Contact procurement staff immediately if damaged equipment is observed.

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## Standard Operating Procedure IWOW-008

**TITLE: Procedures for Offloading Trucked Oily Waste at the Naval Base San Diego Bilge and Oily Waste Treatment System and Naval Base Coronado Oily Waste Treatment Plant**

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**References:** (a) SOP IWOW-064, "Hazardous Material Spill Contingency and Emergency Response Plan – Bilge and Oily Wastewater Treatment System, Naval Base San Diego BOWTS Facility"  
(b) SOP IWOW-022, "Waste Acceptance Form"  
(c) SOP IWOW-020, "Waste Acceptance Criteria for Bilge and Oily Waste Treatment Systems"  
(d) "Contingency Plan and Emergency Procedures Naval Base Coronado-North Island Hazardous Waste Facility (HWF) Industrial Waste Treatment Plant (IWTP) and Oil Recovery Plant (ORP) Collection, Storage, and Transfer Facilities 1 and 2 (CST1 & CST2)."

**Enclosures:** (1) Diagram of BOWTS showing the waste truck offloading location at BOWTS (MAP-09)  
(2) PPE requirements for specific operations/tasks (OTH-01)  
(3) Blank WAF for trucked waste at BOWTS (OTH-05)  
(4) Blank Waste Acceptance Log for trucked waste at BOWTS (OTH-33)

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### 1. PURPOSE

To provide guidance on the tasks associated with offloading oily waste water from a truck into the BOWTS Receiving Basin 101 and into T4A/B at the OWTP.

### 2. ACTION

This procedure applies to Operator Operators.

### 3. PROCEDURE

1. This Standard Operating Procedure (SOP) has been developed to provide guidance to Operators on the tasks associated with offloading oily wastewater into the treatment system after completing the representative waste sample analysis and determining that the waste is acceptable. The procedures outlined below are the minimum guidelines applicable for all hazardous substance bulk transfer operations to minimize error and equipment failure.
2. For operators not previously involved on this operation, they shall, at a minimum, review the PPE requirements in **OTH-01 (Enclosure 2)**. The Operators are authorized to accept waste into the plant, provided that they are cognizant of the location and contents of the Hazardous Materials Spill Contingency and Emergency Response Plan for BOWTS and OWTP, as specified in **Reference (a)** and **Reference (d)**.
3. All unloading operations shall be continuously monitored and supervised throughout the entire process. Operators shall never leave this operation unattended, and shall remain alert at all times for potential problems such as spillage, overfilling, leaks, and fire.
4. Keep personnel out of the vehicle during the unloading operations. Do not leave the vehicle unattended at any time during the entire operation. Maintain communication with the driver at all times.
5. Truck Receipt Procedures:

- a) Direct the vehicle to spill containment (bermed area) next to the Receiving Basin 101 at NBSD or the IW filter press at NBCNI. Ensure the driver sets the parking brakes on the vehicle. If possible, secure the vehicle with physical barriers such as wheel chocks to safeguard against accidental movement and rupture of transfer lines and hoses.
- b) Record the time arrived on the Waste Acceptance Form (WAF), OTH-05 (**Enclosure 3**).
- c) Review the WAF to ensure the appropriate sections have been completed by the customer as instructed in **Reference (b)**. Review any attached laboratory data to ensure that waste received is waste that meets the acceptance criteria as specified in **Reference (c)**.
- d) Perform the required field tests. At a minimum, the first load shall be tested for pH and halogen content at NBCNI and at NBSD. Consult the Lead Operator if there are any questionable test results. Once the waste has been determined to be acceptable, proceed with offloading into the Receiving Basin 101 or into T4A/B. Ensure the test results are recorded on the WAF.
- e) At the BOWTS connect from the truck discharge port to one of the two 3" female camlocks and flexible hose influent line. Turn the ball valve to the OPEN position. Refer to **Enclosure 1**, which shows the waste truck offloading location at BOWTS.
- f) At the OWTP connect from the truck discharge port to the 3" female camlock and flexible hose influent line. Secure the lid to the strainer baskets, open the discharge valve after P38A/B, verify that the valve leading to T4A/B is open, and then open the air valve to either P38A or B.
- g) When pumping is complete, close the influent ball valve. Disconnect the 3" camlock, and carry the open end of the hose to the salvage 5-gallon container to allow the hose to drain completely. At NBCNI OWTP keep suction on the hose, disconnect the 3" camlock, and cap with fitting to prevent spillage.
- h) Complete the remaining portion of the WAF and provide a copy of the completed WAF to the driver.
- i) Record the truck offloading into the Operations Logbook. At a minimum, record the time, volume, WAF bulk control number, and Operator or handler's name. See **Enclosure 4** for the Waste Acceptance Log (OTH-33).

# Standard Operating Procedure IWOW-009

## TITLE: Overall Procedures for Batch Accumulation and Treatment

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**References:** (a) IWOW-021 "Waste Acceptance Procedure and Criteria: Industrial Waste"  
(b) IWOW-022 "Waste Acceptance Form"  
(c) Hazardous Waste Facility Permit, EPA ID No. CA7170090016

**Enclosures:** (1) Batch Treatment Lot Numbering System (INST-01)  
(2) PPE requirements for specific operations/tasks (OTH-01)  
(3) Batch Receipt Summary (OTH-30)

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### 1. PURPOSE

The purpose of this SOP is to establish procedures for the accumulation of wastes in the Industrial Waste Treatment Plant (IWTP) at NBCNI.

### 2. ACTION

This procedure applies to IWOW Operators.

### 3. PROCEDURE

1. The Industrial Waste Treatment Plant at NBCNI consists of batch treatment tanks, a load equalization tank (LET), a clarifier, a multipurpose tank, dual mixed bed filters, and a carbon adsorption system. This standard operating procedure outlines how the tanks and the batches of waste are to be managed, from acceptance of waste to discharge after successful treatment. **References (a)** and **(b)** detail the waste acceptance procedures including waste treatment codes and the criteria for acceptance.
2. The batch treatment system consists of seven tanks within an 8-foot-tall masonry secondary containment system. The containment system is divided into four distinct cells. The following is a list of tanks and their capacities:

| Treatment Tank | Volume/Foot of Tank | Total Volume (gallons)       |
|----------------|---------------------|------------------------------|
| Tanks 1A & 1B  | 6,015.8 gallons/ft  | 138,400 each / 276,800 total |
| Tank 4B        | 21,136.4 gallons/ft | 465,000                      |
| Tanks 5A & 5B  | 710.8 gallons/ft    | 11,375 each / 22,750 total   |
| Tanks 6A & 6B  | 710.8 gallons/ft    | 11,375 each / 22,750 total   |

Tanks 1A and 1B share one containment basin; tanks 5A and 5B share one containment basin; and tanks 6A and 6B share one containment basin. T4B shares containment with other OW treatment tanks. The permit allows for multiple uses of these tanks; however, the current use of the tanks must be clearly indicated and tracked at all times. Additionally, it is imperative that only compatible wastes be stored in the two tanks that are within one secondary containment cell. Regulations prohibit the storage of incompatible wastes in the same containment basin. Before any tank of a pair is used to store or treat wastes other than the type listed, ensure that the waste types are compatible. If wastes are found to be incompatible then do not store them in the same containment basin.

3. The following is the designated typical use of each tank and the other possible uses:

| Treatment Tank | Designated Use of Tank                              | Possible Use of Tank   |
|----------------|---|--|
| Tank 1A        | Phenol/ general organic waste/<br>mixed metal waste | Chrome, cyanide  |
| Tank 1B        | Phenol/ general organic waste/<br>mixed metal waste | Chrome, cyanide  |
| Tank 4B        | None  | Batch treatment and storm water /oily<br>water (LET) holding |
| Tank 5A        | Chrome  | Mixed metal waste/ contaminated oily<br>waste                |
| Tank 5B        | Chrome  | Mixed metal waste/ contaminated oily<br>waste                |
| Tank 6A        | Cyanide   | Mixed metal waste/ contaminated oily<br>waste                |
| Tank 6B        | Cyanide   | Mixed metal waste/ contaminated oily<br>waste                |

NOTE: Batch tank construction and lining material for the tanks indicated in the above table allow for storage and treatment specified waste or waste indicated in Table IWTP-2-1 of the Hazardous Waste Facility Permit (**Reference c**), in accordance with Section 2.

4. The current use of a tank is designated at the industrial waste loading station, by a placard on the tank. The current batch number is assigned in accordance with **Enclosure 1**, and tank use is tracked on **Enclosure 3**. The following is a general procedure for managing tank usage. When transferring cyanide contaminated waste to the cyanide accumulation tank follow additional instructions as detailed in section 5 of this SOP to insure compliance with applicable APCD permit requirements.
- a. Tank is empty.
  - b. The tank is designated to receive a specific waste. Assign a sequential batch number to the tank. Record the accumulation start date on **Enclosure 3** and on the designated tank.
  - c. Mark the chart adjacent to the industrial waste unloading station with the waste being discharged to the tank.
  - d. Attach appropriate placard to the tank designating its use and accumulation start date.
  - e. Start accumulating the designated waste in the tank, accompanied by WAFs tracked in batch folder. Record the selected batch treatment tank number, for example T1-A, in the WAF field labeled "Treatment Tank." Completion of WAF shall be in accordance with **Reference (b)**.
  - f. Treat waste according to the SOP for the specified waste type when tank reaches capacity. IW batch treatment shall be initiated 8 months from the accumulation start date, regardless of tank volume.
6. Maintain a pH greater than 10.5 in the cyanide (CN) tanks (T6A or T6B) in order to comply with the APCD permit. For CN loads, if the level in the lead CN tank that is below 6', attempts should be made to transfer caustic to the tank prior to offloading CN waste according to the following instructions:

- a) Measure pH on all loads destined for the CN tanks.
  - b) If the pH of the load is below 10.5, prior to offloading the waste, add approximately 5 gallons of sodium hydroxide (NaOH) for every 2000 gallons of waste to the tank from the NaOH tank.
  - c) Offload the waste as normal.  
NOTE: If 2<sup>nd</sup> operator is not available to transfer the NaOH, proceed with the offload but also make sure to log that a load with a pH lower than desired had to be added to the cyanide tank so that when operators are available, the transfer can be safely performed.
  - e) When the tank level reaches 6', turn the mixer on and measure the pH. Add caustic as necessary to achieve a pH of 10.5. Once the level of waste in the tank exceeds 6' and the pH has been appropriately adjusted, measure the pH after each load, when possible and adjust, if necessary. All sodium hydroxide addition will be done through the pipeline to minimize exposure.
5. At any given time, waste may be accumulated in one batch treatment tank while the alternate tank is being prepared for treatment. Add incoming waste to the tank into which waste is being accumulated. DO NOT add corrosive waste to an empty treatment tank. Place corrosive waste in a tank designated by Plant Chemist, Operations Officer or by the IWOW Manager. After transferring corrosive waste to the tank check the pH and adjust accordingly. Do not add waste to any tank that has been secured for treatment (i.e., the pre-treatment sample has been taken) unless authorized by the Plant Chemist, Operations Officer or the IWOW Manager.
6. Documentation of batch tank accumulation, treatment, and content disposition is maintained in a batch treatment folder. Typical documentation for the three stages of a batch cycle is indicated below. Once the batch is discharged, the entire batch treatment folder shall be removed from daily service and filed in chronological order for the appropriate batch tank folder in the metal filing cabinets of the Operator's room in Building #788. A copy of the waste manifest documenting disposal of the filter cake derived from the respective batch treatments shall be included with the folder to indicate batch closeout.

**Accumulation:**

- a.) Waste Acceptance Forms
- b.) Batch Receipt Summary – **Enclosure 3**

**Treatment:**

- c.) Laboratory chains-of-custody: initial batch evaluation, jar test protocol, post treatment, and when discharged through the sampling connection.
- d.) Analytical Test Results
- e.) Batch Treatment Summary Sheet – **Enclosure 3**

This form provides an opportunity to log the actual date of reagent addition, the actual volumes of reagents used, any deviations from the standard operating procedure, and the analytical results during each step, as well as any analytical samples submitted to the lab.

**Disposition:**

- e.) Land Disposal Restriction Notification
- f.) Non-Routine Discharge Notification Requirement

- g.) Copy of waste manifest for disposal of sludge associated with particular treatment tank. (Closeout of batch folder)
- 7. For operators not previously involved on this operation, they shall, at a minimum, review the PPE requirements in **OTH-01 (Enclosure 2)**.

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# Standard Operating Procedure IWOW-011

**TITLE: How to Properly Characterize, Jar Test, Treat, and Discharge Full Tanks at the North Island Industrial Waste Treatment Plant (IWTP)**

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**Reference:** (a) Hach® DR/2700 Spectrophotometer Operating Manual  
(b) Precipitation of metal salts versus pH chart

**Enclosures:** (1) Flow Chart: Batch Treatment Procedure for All Tanks (OTH-114)  
(2) Jar Test Worksheet (OP-38)  
(3) Full Scale Worksheet (OP-39)  
(4) Non Routine Discharge Notification Requirements (OTH-75)  
(5) Non-Routine Discharge Notification Requirements (OTH-113)  
(6) Batch Folder QC Checklist (CL-25)  
(7) Tank Transfer Work Authorization (OP-40)  
(8) NBCNI Tank 21 Polymer (DWT 672E) Preparation and Monitoring Form (OP-21)  
(9) Discharge Limits, IWOW/BOWTS (OTH-110)  
(10) PPE requirements for specific operations/tasks (OTH-01)

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## 1.0 PURPOSE

This procedure prescribes step-by-step instructions in a decision tree format for properly characterizing, treating, and discharging full tanks at the North Island Industrial Waste Treatment Plant (IWTP). Full tank waste streams include any combination of cyanides, organics, and high levels of mixed metals [e.g., silver (Ag), cadmium (Cd), chromium (Cr), Copper (Cu), Nickel (Ni), lead (Pb), and Zinc (Zn)] in compliance with the San Diego Metropolitan Industrial Waste Discharge Program (SDMIWDP) permit discharge limits.

## 2.0 BACKGROUND AND TECHNICAL RATIONALE

Effective implementation of the recently updated Waste Analysis Plan and IWOW standard operating procedures (SOPs) enable IWOW Plant Operators to inspect, field test, segregate, and bulk-accumulate incoming Navy Activity Waste Generator waste streams into designated waste treatment tanks in accordance with the facility RCRA permit. Waste treatment tanks accumulate Cyanide bearing waste (Tanks 6A/6B), High Chromium bearing waste (Tanks 5A/5B), and phenols/organic bearing waste (Tanks 1A/1B). However, Operator research of historical analytical data and interviews with experienced IWOW Operators confirmed that trace amounts of Cyanide, Chromium, and organics commonly exist in low concentrations in each full tank. Potential causes include waste stream residues from re-usable waste transport containers (e.g., bowsers) and associated waste transfer piping.

In response to these findings, we have developed and refined a conservative analytical approach for optimizing full tank batch treatment that incorporates decision rules based on full tank waste characterization process knowledge. Our analytical methods and decision rules assume cyanides, organics, and high levels of mixed metals exist in each full waste tank until proven otherwise by analytical data. Consequently, we increase our level of confidence in waste treatment decisions, waste characterization documentation, and waste discharge decisions because we obtain analytical data that characterizes the residual accumulations of Cyanide, Chromium, and organics in each tank prior to full scale treatment. By increasing the accuracy and data representativeness of full tank waste characterization, we substantially decrease the

probability of unsafe full tank waste treatment and unknowingly discharging trace amounts of Cyanide, Chromium and organics that may slightly exceed sewer permit discharge limits. This decision-rule based procedure provides an alternative to pre-existing IWOW SOPs that do not direct IWOW Operators to analyze all full tanks for a wider range of chemicals prior to treatment. Note: This SOP does not prescribe any requirements, procedures, and practices that do not comply with the facility RCRA permit and Waste Analysis Plan.

### 3.0 ACTION

This procedure applies to Operator IWTP Operators.

### 4.0 QUALIFICATION AND TRAINING REQUIREMENTS

At a minimum, all staff responsible for implementing work covered by the SOP must read and understand its contents, and sign a Document Review Training Record.

For operators not previously involved in this procedure they shall, at a minimum, review the PPE requirements in **OTH-01**.

### 5.0 TOOLS, SUPPLIES, AND PREREQUISITE CHEMICALS

- pH meter
- Electronic laboratory scale (1-1200 grams)
- pH standard solutions pH 4, pH 7, and pH 10
- Jar Testing Mixer
- Calculator
- Hach® DR/2700 spectrophotometer or equivalently effective equipment
- COD Reactor
- Chemetrics phenol field test kit or other equivalently effective test
- 2 – 100 mL beakers or equivalent
- 3 – 1,000 mL beakers or equivalent
- Graduated transfer pipets
- 8-Micron filter paper (Whatman 2V) or equivalent
- Operator “Metals Only” & “Cyanide” sampling bottles
- List of Prerequisite Chemicals:

| Item   | Minimum Stocking Levels              |
|--|--------------------------------------|
| Calcium Hypochlorite                         | 800 pounds (8 pails)                 |
| Sodium Hydroxide 50%                         | 400 gallons                          |
| Sulfuric Acid 93-98%                         | 200 gallons                          |
| DWT 6285                                     | 150 gallons (3-50 gallon poly drums) |
| DWT 672E                                     | 10 gallons (2 pails)                 |
| Sodium DimethylDithiocarbamate (Hi-Chem HMP) | 150 gallons (3-50 gallon poly drums) |
| Ferrous Sulfate                              | 1,000 pounds (20 Bags)               |
| Sodium Bisulfite                             | 500 pounds (10 Bags)                 |

## 6.0 SUMMARY OF DISCHARGE LIMITS

The current SDMIWP permit discharge limits are shown in Permit Discharge Limits, IWOW/BOWTS (OTH-110) (See **Enclosure 9**). Discharge Limits, IWOW/BOWTS (OTH-110) (**Enclosure 9**) will be revised in response to changes from the SDMIWP.

## 7.0 PROCEDURE

### 7.1 FULL TANK FIELD SCREENING CHARACTERIZATION

The objective of full tank field screening characterization is to obtain analytical data for the Cyanide, Chromium, organics and mixed metals concentrations in a homogenized full treatment tank to develop a treatment protocol to remove the constituents below permit discharge limits. Analytical results also reveal the most efficient jar treatment scheme to optimize full tank treatment. Refer to the attached process flow chart entitled, Batch Treatment Procedure for All Tanks (See **Enclosure 1**), for a visual description of the following process steps, which are performed prior to jar testing.

- 7.1.1 When any tank becomes full mix the tank for at least 1 hour to obtain representative samples. Obtain the sample and fill preserved bottles to be sent to the Analytical Laboratory Service Center (ALSC) for analysis and 100 milliliter sample to be used for organic field test (see 7.1.3 below). Label the bottles with sample date, sample ID, analysis to be completed, sampler name and the tank number initial. (i.e., Tank 5A Initial). The sample containers and preservative are:
  - Metals (Cd, Cr, Cu, Ag, Pb, Ni, Zn) in a 500 milliliter Nitric acid preserved bottle;
  - Amenable cyanide in a 500 milliliter Sodium Hydroxide preserved bottles
  - Organic field test in a 100 milliliter unpreserved container.
- 7.1.2 Fill out a Chain of Custody (COC) with the tank batch number clearly indicated to accompany the bottles to the ALSC. Place a copy of the COC in the batch folder and sign off the Batch Folder QC Check List (CL-25) (See **Enclosure 6**).
- 7.1.3 Using the 100 mls of sample from step 7.1.1 above, test for organics like phenol using the Chemetrics field test kit. If the results are above 25 ppm as phenol then incorporate a phenol treatment scheme into the jar testing regime (Section 7.2.2). If no, then no organics treatment is necessary.
- 7.1.4 Turn off mixers.
- 7.1.5 Does the analytical from the ALSC show that there is amenable cyanide above the monthly discharge limits? If yes, then incorporate a cyanide treatment scheme into the jar testing regime (Section 7.2.1). If no, then no cyanide treatment is necessary.
- 7.1.6 Does the analytical show that the chromium is above the discharge limits? If yes, then incorporate a Hexavalent Chromium treatment scheme into the jar testing regime (Section 7.2.3). If no, then no Hexavalent Chromium treatment is necessary.
- 7.1.7 Does the analytical show that any of the other six metals that were analyzed are above the discharge limits? If yes, then incorporate a metals treatment scheme into the jar testing regime (Section 7.2.4). If no, then no metals treatment is necessary.
- 7.1.8 Does a jar test need to be started to get a recipe to treat a tank before discharge? If yes, then the project chemist will look at the data and put together a jar testing regime. If no, then the tank can be transferred to tank 7 (Clarifier) and discharged as-is.

7.1.9 Place a copy of the full tank initial analytical results in the batch folder and sign off the Batch Folder QC Check List (CL-25) (See **Enclosure 6**).

## 7.2 Tank Transfers

7.2.1 Industrial waste transfers between treatment tanks (i.e., T1A, T1B, T4B, T5A, T5B, T6A & T6B) are periodically necessary due to tanks being taken out of service for repairs, testing, and other situations.

7.2.2 Tank Transfer Work Authorization (OP-40) check-off sheet (See **Enclosure 7**) must be completed and approved prior to waste transfer operations between waste treatment tanks. It specifies all pre-transfer waste sampling, analysis, and treatment steps that must be conducted, verified, and approved prior to waste transfer. This form is not required for normal treated waste discharge operations.

7.2.3 File the completed Tank Transfer Work Authorization (OP-40) check-off sheet (See **Enclosure 7**) in the batch folder.

## 7.3 JAR TESTING DECISION TREE

The following decision tree, as shown in the attached process flow diagram, Batch Treatment Procedure for All Tanks (See **Enclosure 1**), shall be followed by IWOW Operators based on full tank characterization analytical results. Clearly indicate the tank batch number on the jar test protocol. Place a copy of the jar test protocol in the batch folder and sign off the Batch Folder QC Check List (CL-25) (See **Enclosure 6**).

### 7.3.1 JAR TEST INSTRUCTIONS FOR CYANIDE CONTAMINATED TANKS

7.3.1.1 Turn on the mixers for the tank that the jar tests will be initiated.

7.3.1.2 Let the tank mix for at least 1 hour.

7.3.1.3 Collect in three 1 liter jars 800mls of the homogenized tank.

7.3.1.4 Turn off mixers.

7.3.1.5 Put the jars on the jar testing mixer in the hood in Bldg 788.

7.3.1.6 Calibrate the pH meter.

7.3.1.7 Verify that amenable cyanide result from the laboratory analytical is above the discharge limit for Connection 123.

7.3.1.8 Adjust the pH to 10-10.5 with either Sodium Hydroxide NaOH or Sulfuric Acid H<sub>2</sub>SO<sub>4</sub>. If the amenable cyanide is below the discharge limit skip to **Section 7.3.2**. **NOTE: USE EXTREME CAUTION IF ACIDIFYING THE MIXTURE! Toxic Hydrogen cyanide gas may be created and released! Double check that the hood fan is operating properly and that the sash is lowered to the appropriate level!**

7.3.1.9 Add 0.5, 1.0, 1.5 grams of Calcium Hypochlorite Ca(OCl)<sub>2</sub> to each jar, respectively.

7.3.1.10 Mix for 1 hours.

7.3.1.11 Lower the pH to 7.0 using Sulfuric Acid.

7.3.1.12 Add 0.5, 1.0, 1.5 grams of Calcium Hypochlorite Ca(OCl)<sub>2</sub> to each jar respectively.

7.3.1.13 Mix for 1 hours.

7.3.1.14 Test for amenable cyanide by Hach test method 160. Record the results on the Jar Test Worksheet (**Enclosure 2**). If the results are below discharge limits for Connection 123 then go to the next section. If not, then go back to **step 7.3.1.6** and add 2.0 grams of Calcium Hypochlorite at **step 7.3.1.9** to each jar and 2.0 grams of Calcium Hypochlorite at **step 7.3.1.12** to each jar.

7.3.1.15 Retest for amenable cyanide.

### 7.3.2 JAR TEST INSTRUCTIONS FOR PHENOLS (ORGANICS) CONTAMINATED TANKS

7.3.2.1 If organics like phenols need to be dealt with adjust the pH to 2.5-3.0 with Sulfuric Acid. If not skip to **Section 7.3.3**.

7.3.2.2 Add 1.0, 1.5, 3.5 grams of Ferrous Sulfate  $\text{FeSO}_4$  to each jar respectively.

7.3.2.3 Mix 1 hour.

7.3.2.4 Add 2, 3, 6 mls of Hydrogen Peroxide  $\text{H}_2\text{O}_2$  to each jar respectively.

7.3.2.5 Mix 1 hours.

7.3.2.6 Test for phenols using the Chemetrics field test kit. Record the results on the Jar Test Worksheet (**Enclosure 2**). If results are below 25 ppm for phenols go to the next Section. If not then go back to **step 7.3.2.2** and add 3.0 grams of Ferrous Sulfate to each jar at **step 7.3.2.2** and 6.0 mls of Hydrogen Peroxide to each jar at **step 7.3.2.4**.

7.3.2.7 Retest for phenols.

### 7.3.3 JAR TEST INSTRUCTIONS FOR HEXAVALENT CHROMIUM CONTAMINATED TANKS

7.3.3.1 If Chromium is present above 25 PPM adjust pH to 2.5-3.0 with Sulfuric Acid  $\text{H}_2\text{SO}_4$ . If not, then go to **Section 7.3.4**.

7.3.3.2 Add 0.5, 1.0, 2.0 grams of Sodium Bisulfite  $\text{Na}_2\text{S}_2\text{O}_5$  to each jar respectively.

7.3.3.3 Mix 1 hours.

7.3.3.4 Test for Hexavalent Chromium using Hach test method 90. Record the results on the Jar Test Worksheet (**Enclosure 2**). If the results are less than 0.5 ppm then proceed to the next section if not then go back to **step 7.3.3.1** and add 2.0 grams of Sodium Bisulfite to each jar.

7.3.3.5 Retest for Hexavalent Chromium.

### 7.3.4 JAR TEST INSTRUCTIONS FOR MIXED METALS CONTAMINATED TANKS

7.3.4.1 If the results for the metals analysis show that any of the seven metals are above the discharge limit for connection 120 then go to the **step 7.3.4.2**. If not then go to **Section 7.4**.

7.3.4.2 Total up the amount of metals from the laboratory analytical in ppm. For every 200 ppm of total metals apply a factor shown in the table to the mass and volumes listed in this instruction. Example: Total metals <200 ppm the factor is 1.0; total metals >200 and <400 ppm the factor is 2.0, and so on.

| Range    | Factor | FeSO <sub>4</sub> | HMP           |
|----------|--------|-------------------|---------------|
| <200     | 1.0    | 1.0; 2.0; 4.0     | 1.0; 1.5; 3.0 |
| >200<400 | 2.0    | 2.0; 4.0; 8.0     | 2.0; 3.0; 6.0 |
| >400<600 | 3.0    | 3.0; 6.0; 12.0    | 3.0; 4.5; 9.0 |

- 7.3.4.3 Adjust pH to 2.5-3.0 with Sulfuric Acid H<sub>2</sub>SO<sub>4</sub>.
- 7.3.4.4 Add 1.0, 2.0, 4.0 grams of Ferrous Sulfate to each jar respectively.
- 7.3.4.5 Mix for 1 hour.
- 7.3.4.6 Raise the pH of each jar to 6.0-6.5 with Sodium Hydroxide.
- 7.3.4.7 Add 1.0, 1.5 and 3.0 mls of Heavy Metal Precipitant (HMP) Sodium DimethylDithioCarbamate to each jar respectively.
- 7.3.4.8 Raise the pH to 7.5-9.5 with Sodium Hydroxide depending on the metal(s) that are problematic. If chromium is the problem adjust the pH to the lower end of the pH range. If other metals are at issue adjust to the higher end of the pH range. Refer to reference (b).
- 7.3.4.9 Mix for 1 hour.
- 7.3.4.10 Add 1.0 ml of DWT-6285 charge neutralizer to each jar.
- 7.3.4.11 Mix for 1 hour.
- 7.3.4.12 Add 1.0 ml of DWT-672E flocculent to each jar.
- 7.3.4.13 Mix for 1 hour.
- 7.3.4.14 Turn off mixers and let the sludge settle in each jar for 1 hour.
- 7.3.4.15 Filter the supernatant using an 8-micron filter paper and place the filtrate from each jar into a separate Nitric Acid (HNO<sub>3</sub>) preserved bottle and send to the ALSC for the seven metals analysis. Label the jars tank number and #1, #2, #3 respectively (i.e., Tank 5A #1; Tank 5A #2; Tank 5A #3).
- 7.3.4.16 Fill out a Chain of Custody (COC) with the tank batch number clearly indicated to accompany the bottles to the ALSC. Place a copy of the COC in the batch folder and sign off the Batch Folder QC Check List (CL-25)(See **Enclosure 6**).
- 7.3.4.17 Place a copy of the full Jar Test analytical in the batch folder and sign off the Batch Folder QC Check List (CL-25)(See **Enclosure 6**).

**7.4 SCALING UP THE JAR TEST TO THE TANK**

If any of the jars pass the discharge limits for the cyanide and seven metals analysis use that treatment protocol for the full tank scale-up.

- 7.4.1 Convert the height of the tank in feet to volume in gallons by using the following formula:

$$IWTP \text{ tank volumes per foot} = (\pi r^2 h)(7.48 \text{ ft}^3/\text{gal}) = \text{volume (gal)}$$

Where h = 1 foot

|                      |        |                               |
|----------------------|--------|-------------------------------|
| Tanks 1A&1B          | r=16   | volume/foot = 6015.8 gallons  |
| Tanks 5A, 5B, 6A, 6B | r=5.5  | volume/foot = 710.8 gallons   |
| Tank 4B              | r=30   | volume/foot = 21149.2 gallons |
| Tank 7               | r=21.5 | volume/foot = 10862.5 gallons |

- 7.4.2 Convert grams to pounds of treatment chemical for the volume of the filled tank using the following formula. Record the numbers on the Full Scale Worksheet (OP-39) (See **Enclosure 3**) for tank treatment.

$$\text{Pounds of chemical to add to tank} = \frac{(\text{Volume of the tank}) * \text{grams of chemical} * 0.0022 \text{ (lbs/gram)}}{0.21136 \text{ (gallons in 800 ml jar test)}}$$

- 7.4.3 Convert mls to gallons of treatment chemical for the volume of the filled tank using the following formula. Record the numbers on the Full Scale Worksheet (OP-39) (See **Enclosure 3**) for tank treatment.

$$\text{Gallons of chemical to add to tank} = \frac{(\text{Volume of the tank}) * \text{mls of chemical}}{800}$$

- 7.4.4 Input the calculated values on the Full Scale Worksheet (OP-39) (See **Enclosure 3**).
- 7.4.5 Clearly indicate the tank batch number on the scale up tank treatment protocol. Place a copy of the scale up tank treatment protocol in the batch folder and sign off the Batch Folder QC Check List (CL-25) (See **Enclosure 6**).

## 7.5 TANK TREATMENT INSTRUCTIONS

### 7.5.1 CYANIDE TANK TREATMENT

- 7.5.1.1 Make sure that there are sufficient treatment materials on hand prior to treatment.
- 7.5.1.2 Verify that all instruments; chemical feed systems, and equipment are functioning properly.
- 7.5.1.3 Start tank mixing.
- 7.5.1.4 If cyanide treatment was determined as needed in the Jar Testing decision tree, proceed to step 7.5.1.5. If no cyanide treatment was determined to be needed, proceed to **Section 7.5.2**.
- 7.5.1.5 Adjust the pH of the treatment tank to 10.5 to 11 units with sodium hydroxide or sulfuric acid.
- 7.5.1.6 Calcium Hypochlorite First Step Addition:

Add the calculated amount of Calcium Hypochlorite from the Full Scale Worksheet (OP-39) (See **Enclosure 3**) and mix for 8 hours. Slurry the dry calcium hypochlorite in an appropriate container or tank with water and transfer to the respective tank undergoing treatment. After all the calcium hypochlorite has been added, flush the transfer pump and transfer line into the treatment tank with at least 50 gallons of water.

- 7.5.1.7 Begin adding sulfuric acid to the treatment tank from the sulfuric acid storage day tank, checking pH periodically for accuracy to obtain a pH of 7.0 to 7.5.. If the pH range of 7.0 to 7.5 is exceeded, then use sodium hydroxide to compensate.
- 7.5.1.8 Second Step Calcium Hypochlorite Addition
- Add the calculated amount of Calcium Hypochlorite from the Full Scale Worksheet (OP-39) (**Enclosure 3**) and mix for 6 hours. Slurry the dry calcium hypochlorite in an appropriate container or tank with water and transfer to the respective tank undergoing treatment. After all the calcium hypochlorite has been added, flush the transfer pump and transfer line into the treatment tank with at least 50 gallons of water.
- 7.5.1.9 Obtain a sample from the treatment tank after completing the second step addition of calcium hypochlorite. Filter a 25-mL sample through 8-micron paper and perform the Hach® test 160 for amenable cyanide. Record the amount of amenable cyanide on the Full Scale Worksheet (OP-39) (**Enclosure 3**).
- 7.5.1.10 If amenable cyanide is greater than 0.32 mg/L, raise pH to 10.5 to 11 using Sodium Hydroxide and go to **Step 7.5.1.5** in this section. After retreatment, take a sample for amenable cyanide and submit for testing by the ALSC.
- 7.5.1.11 If amenable cyanide is less than 0.32 mg/L, go to **Section 7.5.2**, Phenols Treatment after Cyanide Tank Treatment.

## 7.5.2 PHENOLS TREATMENT AFTER CYANIDE TANK TREATMENT

- 7.5.2.1 Make sure that there are sufficient treatment materials on hand prior to treatment.
- 7.5.2.2 Verify that all instruments; chemical feed systems, and equipment are functioning properly.
- 7.5.2.3 If phenol treatment was determined as needed in the Jar Testing decision tree, proceed to step 7.5.2.4. If no phenol treatment was determined to be needed, proceed to **Section 7.5.3**.
- 7.5.2.4 Adjust the pH in the tank to 3.0 with Sulfuric Acid.
- 7.5.2.5 Add the calculated amount of Ferrous Sulfate from the Full Scale Worksheet (OP-39) (**Enclosure 3**). Slurry the dry Ferrous Sulfate in an appropriate container or tank with water and transfer to the respective tank undergoing treatment. After all the Ferrous Sulfate has been added, flush the transfer pump and transfer line into the treatment tank with at least 50 gallons of water.
- 7.5.2.6 Mix for 4 hours.
- 7.5.2.7 Add the calculated amount of Hydrogen Peroxide  $H_2O_2$  from the Full Scale Worksheet (OP-39) (See **Enclosure 3**) by transferring from the Hydrogen Peroxide poly tank (T-17) to the appropriate treatment tank. Add  $H_2O_2$  slowly, 5 gallons maximum per minute, there is a probability of having an exothermic reaction while adding  $H_2O_2$ . If the tank starts to radiate a large amount of heat (temperature of the exterior of the tank exceeds 160°F) notify the Plant Chemist and the IWOW Manager immediately and secure the tank treatment.
- 7.5.2.8 Mix 8 hours.
- 7.5.2.9 Test for phenols using the Chemetrics field test kit or other effective test. Record the results on the Full Scale Worksheet (OP-39) (See **Enclosure 3**). If it is below 25 ppm phenols go to the next step. If not then go back to **Step 7.5.2.5** and repeat the addition of Ferrous Sulfate Hydrogen Peroxide to the treatment tank. Retest for phenols.

### 7.5.3 MIXED METALS TREATMENT AFTER PHENOL TANK TREATMENT

7.5.3.1 If Hexavalent Chromium is present above 0.5 ppm, perform the following steps; otherwise, skip to Step 7.5.3.2 of this section.

7.5.3.1.1 Verify that all instruments, chemical feed systems, and equipment are functioning properly.

7.5.3.1.2 Verify tank mixer is running.

7.5.3.1.3 Adjust pH range from 2.5 to 3.0 in the tank using sulfuric acid.

7.5.1.3.4 Add the calculated amount of Sodium Bisulfite from the Full Scale Worksheet (OP-39)(**Enclosure 3**). Slurry the dry Sodium Bisulfite in an appropriate container or tank with water and transfer to the respective tank undergoing treatment. After all the Sodium Bisulfite has been added, flush the transfer pump and transfer line into the treatment tank with at least 50 gallons of water

7.5.1.3.5 Mix for four hours.

7.5.1.3.6 Test for Hexavalent Chromium using Hach test method 90. Record the results on the Full Scale Worksheet (OP-39) (**Enclosure 3**). If it is below 0.5 ppm, continue. If not, then go back to **Step 7.5.1.3.4** and repeat.

7.5.1.3.7 Adjust pH range from 6.0 to 6.5 in the tank using sodium hydroxide.

7.5.1.3.8 Continue with **Step 7.5.3.2** in this section.

#### 7.5.3.2 For all other metals, perform the following steps:

7.5.3.2.1 If other metal treatment was determined as needed in the Jar Testing decision tree, proceed to step 7.5.3.2.2. If no other metal treatment was determined to be needed, proceed to **7.5.3.3**.

7.5.3.2.2 Verify tank mixer is running.

7.5.3.2.3 Adjust pH range from 2.5 to 3.0 in the tank using sulfuric acid.

7.5.3.2.4 Add the calculated amount of Ferrous Sulfate from the Full Scale Worksheet (OP-39) (See **Enclosure 3**). Slurry the dry Ferrous Sulfate in an appropriate container or tank with water and transfer to the respective tank undergoing treatment. After all the Ferrous Sulfate has been added, flush the transfer pump and transfer line into the treatment tank with at least 50 gallons of water.

7.5.3.2.5 Mix for six hours.

7.5.3.2.6 Adjust the pH range from 6.0 to 6.5 in the tank using sodium hydroxide.

7.5.3.2.7 Continue with **Step 7.5.3.3** in this section.

#### 7.5.3.3 Flocculation and precipitation of metals is performed as follows:

7.5.3.3.1 Add the calculated amount of Hills Brothers Hi-Chem HMP (Metal grabber) from the Full Scale Worksheet (OP-39) (See **Enclosure 3**).

7.5.3.3.2 Mix for four hours.

7.5.3.3.3 Raise the pH to 7.5 - 10.5 with Sodium Hydroxide depending on the metal/s that are problematic. If chromium is the problem adjust the pH to the lower end of the pH range. If

other metals are at issue adjust to the higher end of the pH range. The treatment protocol will specify the target pH levels.

- 7.5.3.3.4 Mix for at least four hours.
- 7.5.3.3.5 Keep the mixers on and take a sample using three 1 liter jars. Obtain approximately 800mls of the homogenized tank into each jar. Then proceed as with the following steps.
- 7.5.3.3.6 Turn off mixers
- 7.5.3.3.7 Put jars in hood in Building 788 on jar test mixer
- 7.5.3.3.8 Add 1.0 ml of DWT-6285 charge neutralizer to each jar.
- 7.5.3.3.9 Mix for 1 hour.
- 7.5.3.3.10 Add 1.0 ml of DWT-672E flocculent to each jar.
- 7.5.3.3.11 Mix for 1 hour.
- 7.5.3.3.12 Turn off mixers and let the sludge settle in each jar for 1 hour.
- 7.5.3.3.13 Filter the supernatant using an 8-micron filter paper and place the filtrate from each jar into separate preserved bottles as follows:
  - Metals (Cd, Cr, Cu, Ag, Pb, Ni, Zn) in a 500 milliliter Nitric acid preserved bottle;
  - Amenable cyanide in a 500 milliliter Sodium Hydroxide preserved bottle
- 7.5.3.3.14 Fill out a Chain of Custody (COC) with the tank batch number clearly indicated to accompany the bottles to the ALSC. Place a copy the COC in the batch folder and sign off the Batch Folder QC Check List. See enclosure 7. Label the jars with ALSC required information and identify the samples as the tank number final (i.e., Tank 5A final).
- 7.5.3.3.15 Place a copy of the full tank final analytical in the batch folder and sign off the Batch Folder QC Check List (CL-25) (See **Enclosure 6**).
- 7.5.3.3.16 If the analytical results show constituent levels in compliance with discharge limits then proceed with the 48-hour notification to the City of San Diego. If not then consult with the Operator Project Chemist for further treatment protocols.
- 7.5.3.3.17 Clearly indicate the tank batch number on the 48-hour discharge notification to the City of San Diego.
- 7.5.3.3.18 Place a copy of the 48-hour discharge notification to the City of San Diego in the batch folder and sign off the Batch Folder QC Check List (CL-25) (See **Enclosure 6**).

## 7.6 48-HOUR DISCHARGE NOTIFICATION TO CITY OF SAN DIEGO

If laboratory analytical report shows that constituent levels are in compliance with discharge limits, send a fax notification to the City of San Diego laboratory sampling supervisor with at least 48-working hours notice (Monday-Friday) of the intent to discharge from Connections 120/123 (See **Enclosures 4 and 5**, Non-Routine Discharge Notification Requirements). File the original of

the fax notification with the dated fax receipt in the discharge notification file folder. Email CNRSW a copy of the notification. Include a copy of the discharge notification in the batch folder.

- 7.6.1 Two hours before the City of San Diego shows up to collect samples from Connection 120 and 123, turn on mixers.
- 7.6.2 Add the calculated amount of DWT-6285 from the Full Scale Worksheet (OP-39) (See **Enclosure 3**) to the treatment tank.
- 7.6.3 Mix for 1 hour.
- 7.6.4 Add DWT-672E from T-21 during the transfer of the treated tank to the clarifier (Tank 7). Fresh polymer needs to be made up before each discharge because it loses effectiveness in a number of days according to the manufacturer. If new DWT-672E needs to be made please transfer the expired material in T-21 to T-7 the day before discharge.  
  
1 gallons per minute (GPM) of 1/2% DWT-672E per 200 GPM of treated tank going to T-7 needs to be added during processing. This is assuming that the polymer is being made up in T-21 at 5 gals of DWT-672E per 1000 gallons water (1/2% mixture).
- 7.6.5 Complete T-21 Preparation portion of the NBCNI Tank 21 Polymer (DWT 672E) Preparation and Monitoring Form (OP-21) at least one day prior to discharge (See **Enclosure 8**).
- 7.6.6 Prior to transfer of the treated waste to Tank 7, and then to Tank 8, make sure the City of San Diego sampling crew is there to take a grab sample from appropriate connection, unless notification has been received from the City of San Diego that no sampling will be performed or if the City of San Diego don't show up as scheduled.

## 7.7 PLANT START-UP

- 7.7.1 Prior to start-up of the IWTP, go through the IWTP Batch Discharge Checklist, making sure that all valves are lined up properly to assure that the plant effluent will pass through the sand filters and carbon adsorbers. Initial the checklist and, if possible, have another person double-check the line-up configuration.
- 7.7.2 Start up the IWTP and record the surge tank flow meter reading and tank level after the transfer from the mixed metals treatment tank on the Full Scale Worksheet (OP-39) (See **Enclosure 3**).
- 7.7.3 Monitor CON 120 (COMP) for Metals, CON 120 (GRAB) for VOC's and SVOC's, and CON 123 (GRAB) for Amenable Cyanide by samples collected by the City of San Diego or Operator..
- 7.7.4 Place a copy of the Connection lab reports (provided by the City of San Diego or Operator) in the batch folder and sign off the Batch Folder QC Check List (CL-25) (See **Enclosure 6**).

## 7.8 Sludge and Filter Cake

- 7.8.1 After a sludge bin is full and no more material will be added, obtain a representative sample of the sludge generated from the treated tank and send it to ALSC for testing of Total Metals, TCLP Metals, STLC Metals, Total Cyanide, and Total Sulfide.
- 7.8.2 Fill out a Chain of Custody (COC) with the tank batch number clearly indicated to accompany the bottles to the ALSC.
- 7.8.3 Place a copy of the full filter cake analytical report in the batch folder and sign off the Batch Folder QC Check List (CL-25) (See **Enclosure 6**).

7.8.4 Clearly indicate the tank batch number on the filter cake manifest. Place a copy of the manifest in the batch folder and sign off the Batch Folder QC Check List (CL-25) (See **Enclosure 6**).

## 7.9 BATCH FOLDER RECORD MANAGEMENT

All batch folders must contain:

1. Batch folder QC check list
2. WAFs / Manifest if applicable
3. Tank initial COC
4. Tank initial lab report
5. Tank jar test protocol
6. Tank jar test COC
7. Tank jar test lab report
8. Tank scale up treatment protocol
9. Tank final COC
10. Tank final lab report
11. City 48hr discharge notice
12. CON 120/123
13. Filter cake COC/Filter cake lab report
14. Manifest (with TSDF final signature) for filter cake

All of the above documents must have the tank batch number clearly marked to demonstrate waste tracking from waste acceptance to water discharge and filter cake disposal.

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## Standard Operating Procedure IWOW-013

### TITLE: Backflush Procedures for the Pressure Vessels (Carbon Filters), Backwash Procedures for Dual Media Filters (Sand Beds)

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- Reference:**
- (a) Calgon Carbon Corporation Model 10 Customer Service Manual
  - (b) Dual Media Filter Units Installation, Operation, and Maintenance Manual – Loprest Water Treatment Company, Rodeo, California
  - (c) Operating Procedures How to Properly Characterize, Jar Test, Treat, and Discharge Full Tanks at the North Island Industrial Waste Treatment Plant (IWTP), Section 7.7 SOP IWOW-011
  - (d) PE Certification for the Dual Media Filter Units
  - (e) PE Certification for the Carbon Absorber Pressure Vessels
  - (f) DTSC Part B Permit and Application 97-SC-002 and Application
  - (g) IUDP MWWWD Discharge Permit 08-0018
  - (h) Post Tank 8 Discharge Procedure for Treated Industrial Waste Water IWOW-062
  - (i) Preventive Maintenance Schedule
  - (j) Hach TOC method 10129

- Enclosures:**
- (1) IWTP Batch Discharge Checklist ((OTH-07)
  - (2) Wet Carbon Adsorbers and Sand Filter Plot Plan (DRW-01)
  - (3) Series Operation: PV-1 to PV-2 or PV-3 to PV-4 (DRW-02)
  - (4) Single Adsorber Operation: PV-2 or PV-4 (DRW-03)
  - (5) Series Operation: PV-2 to PV-1 or PV-4 to PV-3 (DRW-04)
  - (6) Single Adsorber Operation: PV-1 or PV-3 (DRW-05)
  - (7) Calgon Model 10 Pressure Drop Table (Non BW Parallel) (OTH-74)
  - (8) Carbon Adsorber Valve Alignment Guidelines (TAB-10)
  - (9) NBCNI Dual Media Air Scour/Backwash Procedures (CL-27)
  - (10) PPE requirements for specific operation/tasks (OTH-01)

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### 1) PURPOSE:

The purpose of this procedure is to provide guidelines and procedures to operate and backflush the pressure vessels (carbon filters), designated PV-1, PV-2, PV-3 & PV-4, and backwash the dual media filters (DMFs), designated T-10 A, T-10B and T-10C, at the NBCNI Industrial Wastewater Oily Wastewater Treatment Plant (IWOW).

### 2) BACKGROUND:

- a) The granular activated carbon (GAC) filters receive water from the DMFs. Normal flow through the carbon filters is from top to bottom. The carbon filters are connected in series (PV-1 to PV-2) and (PV-3 to PV-4). During backflushing plant water is sent backwards through the carbon filters through the local industrial water hose hookup and then sent to T-4B via trench or T-1A, T-1B through discharge to the sump. Refer to the Calgon Model 10 manual and PE certification for the Pressure Vessels for a full list of system components.
- b) Plant water from the Surge Tank (T-8) is pumped to one or more of the DMFs. The DMFs remove large particles and suspended solids by the physical process of filtration and entrapment from the treated water stream. The three DMFs are connected in parallel. Normal flow through the DMF is from top to bottom. The effluent from the DMFs is then pumped to the Liquid Phase Carbon Vessels (V-1, 2, 3, and 4). When the DMFs are backwashed the flow is reversed and the backwash liquid flows out the top of the DMF's to clarifier (T-7) via pipeline. The DMF's also

include an air scour system that is used during backwashing. Refer to the Dual Media Filter Units Installation, Operation, and Maintenance Manual and PE certification for the DMF's for a list of system components.

### 3) ACTION:

This procedure applies to IWOW Operators.

### 4) GENERAL

- a) Care should be taken to insure that the design parameters are not exceeded (flow rates, pressures, temperature, etc.).
- b) Refer to manufacturer's data for more operational details.
- c) Filter units shall remove suspended solids, metals and organics that carry over from the clarifier.
- d) For operators not previously involved in this operation they shall, at a minimum, review the PPE requirements in **OTH-01**.

### 5) OPERATING PROCEDURES FOR THE CARBON FILTERS

#### a) Parallel Flow Start-Up:

- i) The following sequence of steps should be followed to bring the two carbon adsorption system trains on line: **Please note:** the valve sequence #5 in the Calgon Customer Service Manual called parallel flow is not the same as the IWTP parallel flow set-up – and thus, is not applicable.
  - (1) Prior to start-up of the IWTP, go through the IWTP Batch Discharge Checklist (**Enclosure 1**) – making sure that all valves are lined up properly to assure that the plant effluent will pass through the sand filters and carbon adsorbers. Initial the checklist and, the Lead Operator on duty will double-check the line-up configuration. For details on the sand filters operation, consult **Reference b and Enclosure (1)**.
  - (2) Configure the carbon adsorbers system for flow through both carbon adsorption trains. Consult with the Lead Operator if uncertain which of the four adsorber operations modes (**Enclosures 2, 3, 4, 5, and 6** and Figures 1 through 4 in **Reference a**) to use, and align the carbon adsorber valves accordingly.
  - (3) Confirm the valves in the effluent lines from the adsorbers (V4 and V8) are open.
  - (4) Start up the IWTP and record the surge tank flow meter reading and LET level (after the transfer from the mixed metals treatment tank) on the respective batch treatment sheet (**Reference b**). Slowly increase the flow rate of clarifier surge tank discharge pump (P-8A or P-8B) while in AUTO.
  - (5) Check the pressure DP gauges on the adsorbers. During normal operations the DP should be approximately 10 psi. If the backpressure is in excess of 20 pounds psi at 500 GPM, shutdown the IWTP and proceed to backflush the carbon beds with water per subsection 5)c) below. To determine the expected backpressure, refer to the Model 10 Pressure Drop Table (**Enclosure 7**) – use the Non-BW Series data line and multiply pressure drop figure for a given flow by 1.1.
  - (6) Open the ¾" valves located on the side wall of each vessel to bleed off any air that is trapped underneath the internal cone. At this point, flow should be established downflow through both vessels, and they will be on-line in parallel.

- (7) After 20% of the initial IWTP volume or a maximum 90,000 gallons has been recycled to the front of the plant, switch the plant effluent off total recycle and over to sewer discharge. First open the sewer discharge valve and then close the recycle valve.

**b) Shutdown**

- i) After completing shutdown of IWTP plant per SOP IWOW-034 at the end of a batch discharge, isolate the carbon adsorbers and commence with backflushing.
- ii) In order to obtain full utilization of the carbon and prevent air entrapment and channeling in the bed, the water level must remain above the carbon bed. After backflushing the beds, close the valves as a precaution to prevent the bed from draining due to gravity.

**c) Backflush Procedures**

- i) Backflushing is a procedure involving running clean contaminant free water upflow through the adsorber. Backflush should be performed at the end of batch discharge sequence, or per preventative maintenance schedule. Backflushing allows for the removal of fine particles in the upper portions of carbon bed that contribute to backpressure problems.
- ii) When a backflushing operation commences, the flow past the site glass on the backflush line will be dark with fines and clears up with time. Generally, a half hour to an hour of backflush should help backpressure related problems.

(1). The IWTP plant Model 10 units are non-backwashable versions – that is they do not have a dedicated backwash water pump that allows for 800-1000 gpm flow. Instead, the IWTP Model 10 units are backflush capable with an inch and half inch hose connection capable of 150-225 GPM.

(2). Isolate the adsorber tank to be backflushed.

(2) If carbon adsorber PV-1 or PV-3 is to be backflushed, perform the following valve sequencing – Close valves V-1, V-2, V-3 and V-4. Open drain valve V-9, Valves V-5, V-6, V-7 and V-8 can remain aligned. Hook up the water hose to 1-1/2" camlock fitting on the base and align valving to permit water flow into bottom of adsorber and make sure drain valve V-9 is open. At the end of the backflush operation, reverse valve sequencing- Open valves V-1, V-2, V-3 and V-4. Close drain valve V-9 (this keeps the carbon wet until next use.).

(3) If adsorber PV-2 or PV-4 is to be backflushed perform the following valve sequencing – Close valves V-5, V-6, V-7 and V-8. Open drain valve V-10. Valves V-1, V-2, V-3 and V-4 can remain aligned. Hook up the water hose to 1-1/2" camlock fitting on the base and align valving to permit water flow into bottom of adsorber and make sure drain valve V-10 is open. At the end of the backflush operation, reverse valve sequencing- Open valves V-5, V-6, V-7 and V-8. Close drain valve V-10 (this keeps the carbon wet until next use.).

**d) Monitoring**

- i) Two items should be monitored: inlet and outlet water quality and pressure drop across the system. Sample connections are provided on the inlet and outlet lines from each vessel to take water samples and pressure gauges are provided to measure the pressure drop across each carbon bed.
- ii) Analyses for TTO compounds, (EPA 624 and 625), should be done on the inlet and outlet of primary adsorber for each train in service on an annual basis. The primary adsorber is the 1<sup>st</sup> GAC adsorber in series to receive the effluent from the DMF's and the polishing adsorber is the 2<sup>nd</sup> GAC adsorber in series. The chemist will review the results. If analyses indicate that breakthrough has occurred for TTO – that is no reduction in TTO - the plant manager is to be notified immediately. The plant manager will conduct an investigation into the cause of

the anomaly (TTO should be reduced in all cases) and develop and implement corrective actions (e.g., change the carbon).

**e) Valve Operation**

When a vessel off-line is taken off-line or perform maintenance or backflushed, the process valves should be opened and closed in a slow and even motion. Abrupt opening and closing of the valves can shock the system.

**f) Maintenance/Spare Parts**

Refer to manufacturer's specifications for scheduled maintenance and spare parts ordering.

**6) OPERATING PROCEDURES FOR THE SAND FILTERS**

**a) Start-up Sequence:**

- i) Fully open the system valve directly up-stream of the influent flow meter.
- ii) Ensure one of the transfer pumps (P-8A or P-8B) is isolated from the system.

Verify that all DMFs valves are in the correct position for normal operation, as shown in the table below.

| DMF          | Normal Operation |
|--------------|------------------|
| Top Valve    | Closed*          |
| Middle Valve | Open#            |
| Bottom Valve | Open             |

NOTE \*: To be opened for air scour and backwash operations only

NOTE #: Initially open valve half (1/2) way only and then complete the valve alignment. After the selected pump (P-8A or P-8B) is started in AUTO mode, adjust these DFM valves SV-7, SV-11, and SV-15 to a meter reading of 150 to 300 gallons per minute (GPM) on flow meters SFM-2, SFM-3 and SFM-4 respectively. Balance the flow so that each filter is running at approximately the same rate

- iii) Verify the T-8 discharge valve is open.
- iv) Start the other transfer pump (P-8A or P-8B).
- v) Check for air release from each tank; this should occur automatically.
- vi) After all air has been released from DMFs, slowly open system effluent valve and observe flow rates (SFM-2 for T-10A, SFM-3 for T-10B, and SFM-4 for T-10C). DO NOT exceed design flow rates.
- vii) Maximum design flow rates are as follows:
  - (1) Tank T-10A, 350 gallons per minute (gpm) as shown on Flow Meters (SFM-2) and adjusted by Tank T10A outlet valve.
  - (2) Tank T-10B, 350 gpm as shown on Flow Meters (SFM-3) and adjusted by Tank T10B outlet valve.

(3) Tank T-10C, 350 gpm as shown on Flow Meters (SFM-4) and adjusted by Tank T10C outlet valve. (Enclosure 8)

viii) Normal flow rates are determined by a flow control valve on the clarifier surge tank transfer pump discharge.

#### **b) Normal Operation**

- i) Hayward PVC butterfly valves are utilized to direct service, backwash, and bypass flows. For normal operation, the three valves on each DMF are in the position shown in (**Enclosure 9**).
- ii) Periodically monitor the pressure gauges on the system influent and system effluent pipe show line pressure in PSIG. During operation, the difference in the inlet and outlet reading from the two flow meters, respectively, is the differential pressure (DP). The DP is used to determine when backwash may be required by one or all of the DMFs.
- iii) The system flow rate will be determined by the system valve up-stream of the flow meter on the clarifier surge tank transfer pump discharge.
- iv) Under normal operation, individual DMF flow adjustments are not required at the DMF valves.
- v) If one DMF consistently operates at a higher flow rate than the others (even after a system cleaning cycle) it should be taken out of service and inspected for loss of filter media.

#### **c) Shutdown Sequence**

- i) Turn off the T-8 transfer pump (P-8A or P8B).
- ii) Close the system effluent valve downstream of the DMF's outlet manifold. Care must be taken not to over-pressurize the system.
- iii) Ensure backwash valves on DMFs T-10A, T-10B, and T-10C are open and drain valves are closed (one for each of the DMF's), consult with (**Enclosures 8 and 9**).
- iv) The DMFs can be left shut down in the pressurized mode for extended periods of time. If desired, open drain tank valves to relieve pressure and then return them to the closed position.

#### **d) Prior to Air Scour and Backwash**

- i) The filter media should be cleaned whenever a differential pressure of 10 pounds per square inch (psi) develops between the influent and effluent pressures, or at least once per discharge.
- ii) Prior to air scouring and backwashing perform the following activities for the three DMF's:
  - (1) After all flow from T-7 (Clarifier) to T-8 (Surge Tank) has stopped from Industrial Waste discharge, verify pump P-8A or P-8B is not running in Auto, then place the pump in OFF condition.
  - (2) DO NOT Air Scour and Backwash the DMF's immediately or after the Industrial Waste discharge. When P-8A or P-8B is secured, make sure the T-8 tank is at the lowest level (Approximately three feet).
  - (3) The clarifier MUST be desludged first until the tank level is approximately one to two feet below the weir, temporarily secure from desludging.
  - (4) Fill the T-8 tank with clean contaminant free water using plant water. If more water is needed for backwashing, continue to refill T-8 with water until backwashing operation is completed

- (5) The cycled water from DMF's should remain in clarifier or not to return to T-8. This is to prevent sending dirty water back to the DMF's from the clarifier.
- (6) When filling T-8 with plant water, DO NOT allow the discharge end of the fire hose to come in contact with the water inside of the tank to prevent contaminating the fire hose. When finished remove and secure the fire hose.
- (7) The water from T-8 will be used to backwash the DMF's and cycle back to the clarifier only.
- (8) REMINDER... The DMF's must be air scoured first. When completed, proceed to the backwash procedures. For more details, consult with (**Enclosures 9**).

**e) Air Scour**

- i) The Dual Media Filter (DMF) discharge operation – must be secured for air scouring and followed by backwashing, whenever the differential pressure ( $\Delta P$ ) of 10 (psi) develops between the Influent (INF-G) and the Effluent (10A-G or 10B-G or 10C-G). Consult with (**Enclosure 9**). Air scour the DMF, one unit at a time.
- ii) In the event when air scouring to T-34, a second operator must be positioned at the air valve leading to T-34 to verify that the valve remains OPEN when air scouring and backwashing is taking place.

**f) Backwash**

- i) Verify that T-8 transfer pump is operating (P-8A or P-8B).
- ii) Verify that all valves on the other DMFs not being backwashed are closed.
- iii) Verify the valves on the DMF being backwashed are in the following position as shown in (**Enclosure 9**):

| DMF          | Backwash |
|--------------|----------|
| Top Valve    | Open     |
| Middle Valve | Closed   |
| Bottom Valve | Open     |

- iv) SLOWLY open DMF T-10A top branch piping valve and observe backwash flow meter on the piping to T-7 (Clarifier), then to T-8 and back to DMF. DO NOT exceed design backwash rate (700 GPM). Continue backwashing cycle for 4 to 5 minutes.
- v) After backwash cycle has been completed and plant water has become clear, close the Filter T-10A top branch piping valve.
- vi) Repeat steps (a) through (e) of this section for Filters T-10B and T-10C if required.
- vii) Once all the DMFs that require backwash have been backwashed, return the DMFs to normal operation per Section 5.1.
- viii) If the post-backwash pressure drop is not below 6 to 10 psi, the backwash procedure should be repeated. If the pressure drop does not drop below 6 to 10 psi after two backwash cycles, conduct proper procedures for isolating and draining the DMF. Inspect the media bed. The media bed may need to be replaced or changed out.

**g) Maintenance**

**An inspection of the DMFs should be conducted and recorded on forms at least weekly. Inspect and test pressure safety relief valves per code requirements. Verify calibration of instrumentation as recommended by manufacturer.**

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# Standard Operating Procedure IWOW-015

**TITLE: Start-Up and Operating Procedures for Industrial Waste Filter Press**

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**References:** (a) J-Press Filter Press 800mm Owner's Manual  
(b) CCR Title 22 66265.173(a)

**Enclosures:** (1) NBCNI IWTP Sludge Transfer Checklist (CL-34)  
(2) PPE Requirements for specific operations/tasks (OTH-01)

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**1. PURPOSE:**

This procedure and enclosed NBCNI IWTP Sludge Transfer Checklist describe the communications, valve settings, affected pumps, and monitoring requirements for three sludge transfer options involving the industrial filter press.

**2. ACTION:**

This procedure applies to all IWOW Operators.

**3. PROCEDURE**

1. For operators not previously involved in this operation they shall, at a minimum, review the PPE requirements in **OTH-01**.
2. The bin under the IW filter press shall have the hard mounted pull tarp deployed over the entirety of the bin (closed and covered) at all times unless the operator is loading the bin. Per Title 22 all hazardous waste containers shall be closed during transfer and storage.
3. If the operator suspects a rain event eminent, the operator shall, in addition to having the hard mounted pull tarp over the bin, to cover the bin with the rain tarp to prevent additional moisture entering the bin.
4. Refer to NBC NI IWTP Sludge Transfer Checklist (Enclosure CL-34) and select the correct task option:  
  
Task A: Sludge Transfer from T-7 (Clarifier) to T-34 (Sludge Storage Tank)  
  
Task B: Sludge Transfer from T-7 to T-304 (Bypassing T-34)  
  
Task C: Sludge Transfer from T-34 to T-304
5. Document your work on the checklist.

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## Standard Operating Procedure IWOW-016

**TITLE:** Transferring Recovered Oil from Storage Tanks to Tanker Truck at NBCNI

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**References:** (a) SOP IWOW-005 Waste Flow Log Records

**Enclosures:** (1) Recovered Oil Transfer Valve Alignment Verification Checklist (CL-38)  
(2) Bill of Lading (OP-30)  
(3) Recovered Oil Shipment Certification ((OTH-126)and (OTH-127)  
(4) PPE Requirements for specific operations/tasks (OTH-01)  
(5) Recovered Oil Lifting Report (OTH-103)

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### 1. PURPOSE

To provide standard procedures for transfer of recovered oil from Recovered Oil (RO) Tanks 1093 and 1094 to tanker trucks in the oil offload area on the north side of the plant.

### 2. ACTION:

This procedure applies to all IWOW Operators.

### 3. PROCEDURE:

- a) For operators not previously involved in this operation they shall, at a minimum, review the PPE requirements in **OTH-01**.
- b) Verify that tanks 1093 and or 1094 are full and ready for transfer.
- c) Prior to taking samples from the tank to be emptied to determine the purity of the recovered oil, the tank will be dewatered.
- d) Align the valves on the recovered oil pipe line to feed LET T-4A. Refer to check list.
- e) Start Pump P-35 A or B and run for a short period of time 3 to 5 minutes minimum.
- f) Slowly open drain valve (MF 19/21) on pump and check for water using Water Finder Paste. If water is present, close drain valve and continue to run. Continue this step until water is no longer present, as indicated by the paste.
- g) Align the valves for continued operation. Refer to check list CL-38 for valve line up.
- h) The day prior to tanker arrival for the first lifting from the designated tank. Dewater the tank one final time. Refer to step d.
- i) Upon arrival of tanker truck, direct truck to the recovered oil off-loading area conduct Job Safety Analysis with truck driver and all operators involved.
- j) Verify that the skimming operation and OW plant operation with oil side aligned are secure
- k) Reverse wastewater flow from skimming operation to clear line to LET T-4A using P-35 pumps.
- l) Close the valves on the tank that will not be pumped down.(refer to CL-38)

- m) Open the two valves (1093-1,3/ 1094-1,3) (on the north side of the Recovered Oil Tank) to be pumped down.
- n) Close valve at unloading hose connection on wastewater pipe.(refer to CL-38)
- o) Reverse suction on RO hose using the P-35 pumps.
- p) Take off camlock on RO hose and add RO valve to RO hose.
- q) Open pressure relief tap in loading hose connector protection cap with hose connector located at loading area sump. Relieve pressure and reverse suction on hose back to T-4A.
- r) Assist tanker truck driver with repositioning hose to make connection to tanker truck. Ensure positive locking is installed on all discharge hose connections.
- s) Upon visual verification connection is made, start pumps P-35 A or B by changing HOA switch located at the pumps to hand position.
- t) Based on an empty tanker truck, the truck driver will know how many gallons of recovered oil are to be pumped into the tanker truck. The tanker truck driver will monitor the filling process and direct the operator when to shut the pump or pumps off when tanker truck is full.
- u) Truck driver will let the tanker truck sit for 10 minutes, check for presence of water in the tanker truck by water paste method. If water is present, remove water from tanker truck. If water quantity is acceptable, skip to Step w.; otherwise, continue.
- v) Water Removal sub routine:
  - a. Operator will line valves to flow back to T-4A.
  - b. Pump P-35 A or B will be started and run to withdraw water and small amount of oil from the tanker truck back to T-4A.
  - c. With water removed, close and open valves to recovered oil loading position.
  - d. Start pumps P-35 A or B to begin refilling tanker truck with recovered oil.
  - e. Test again for water after refilling, using Step s. If no water is present, continue; otherwise perform Steps t through x.
- w) Before the hoses are disconnected, the BOWTS Operator will shut off the outlet port main valve and open the blowdown air valve to push all remaining liquid to the truck tank. When approximately ~10 seconds has elapsed, the air relief valve can be opened and the blowdown valve closed. .
- x) After the blowdown has been completed, the truck can disconnect its hoses from the BOWTS outlet port.
- y) If multiple connections and chambers are provided on tanker truck, reconnect hose to next connection. If not, skip to Step gg.
- z) Realign valves to recovered oil loading operation.
- aa) Repeat Steps p through cc.
- bb) Install protective cap on recovered oil unloading hose, close pressure tap, and reposition over sump.
- cc) Recovered oil filling procedures are the same for multiple trucks.

- dd) After all recovered oil is removed from the tank being off-loaded, then skimming operations and OW plant operations with oil side aligned can resume.
- ee) Prior to tanker truck leaving site, provide driver with appropriate paper work; i.e. Government Bill of Lading, driver's copy of Bill of Lading, Recycled Oil Shipment Certification, and analytical results.
- ff) The site will retain a copy of the document package under document control procedures; i.e.. Government Bill of Lading, driver's green copy of Bill of Lading, and photo copy, Recycled Oil Shipment Certification, and analytical results. The facility Operator shall record the amount of recovered oil removed for each shipment in the operating log, and the total amount of recovered oil removed from the facility on the Waste Flow Log, in accordance with Reference (a). Enclosure 5 (OTH-103) is the Recovered Oil Lift Report.

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# Standard Operating Procedure IWOW-017

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## TITLE: Industrial and Oily Waste Sludge Disposal Procedures

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**References:** (a) SOP IWOW-054, "Operational Guidelines and Procedures for NBCNI Oily Waste (OW) Filter Press"  
(b) SOP IWOW-015, "Start-Up and Operating Procedures for Industrial Waste Filter Press"

**(c) SOP IWOW-072 "Operational Guidelines and Procedures for NBSD Oily Waste Filter press"**

**Enclosures:** (1) Industrial Waste Profile No. PH10: Industrial Waste Treatment Sludge (OTH-88)  
(2) Oily Waste Profile No. HW85: ORP, Oily Waste Sludge (OTH-89)  
(3) Oily Waste Profile No. HW86: ORP, Oily Waste Filter Cake (OTH-90)  
(4) Inspection of Roll Offs (Returning - Empty Bins) (OP-34)  
(5) Inspection of Roll Offs (Pre Shipment – Full Bins) (OP-35)  
(6) Uniform Hazardous Waste Manifest (OTH-96)  
(7) PPE Requirements for specific operations/tasks (OTH-01)

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### 1. PURPOSE

The purpose of this SOP is to provide operating procedures for industrial waste and oily waste sludge handling and disposal at IWTP/ORP NBCNI.

### 2. ACTION

This procedure applies to Representatives and IWOW Operators.

### 3. BACKGROUND

The processing of oily waste sludge and industrial waste sludge shall be conducted in accordance with **references (a)** and **(b)** respectively.

The industrial waste (IW) sludge is currently managed as a RCRA hazardous waste, meeting the EPA waste codes of F002 (halogenated solvents), F006 (wastewater sludge from metal finishing operations), F009 (spent stripping and cleaning bath solutions), D006 (cadmium), D007 (chromium), and any other metals that are identified during sample analysis. In addition the IW sludge meets the state waste code 491 (unspecified sludge waste). (See **Enclosure 1**)

The oily waste (OW) sludge is currently managed as a non-RCRA hazardous waste, and is identified with the state waste code 222 (oil/water separator sludge). Because IW and OW sludges have different profiles, they shall be kept segregated by accumulating each in separate containers. (See **Enclosures 2 and 3**)

For the operators not previously involved in this operation they shall, at a minimum, review the PPE requirements in **OTH-01 (Enclosure 7)**.

NOTE: Only one container shall be placed into service, for each waste, until the container is filled. Unless T1094 is high level in which case bins under each press may be used alternately.

### 4. STORAGE/ACCUMULATION TIME

The oily waste and industrial waste sludge must be removed from the site within 1 year of the accumulation start date (ASD) of the sludge. However, the ASD for the IW sludge begins on the date of initial waste accumulation in the batch tank from which the sludge was derived. To

ensure timely removal of the sludges, the IW Operator shall maintain a status of the waste containers on the oily waste status board. The board shall identify the container number, the contents (IW or OW sludge), the start accumulation date, the container status (empty, available, full).

#### 5.0 TANK BATCH NUMBER FOLDERS

The Supervisor or Lead Operator will maintain a folder with specifies the IW Sludge bin number and which batch numbers went into that bin. Also included in this folder will be the tank discharge date, the ASD of the bin, the bin pick up date, and the manifest number the that bin went out on.

#### 6.0 SAMPLING

##### Industrial Waste Sludge

Prior to the submission of a 1348 to DLA, analytical results of the industrial waste must be obtained. IWOW operators will collect a waste sample and submit the sample to the lab for analysis, accompanied by a properly completed chain of custody. Include all batch numbers that are associated with the sludge on the chain of custody. The industrial waste will be analyzed for VOC, SVOC, total and amenable Cyanide, TCLP for metals and for n-butyl alcohol, carbon disulfide, methanol, and cyclohexanone. Periodically, an F-solvent report may also be required. All batch numbers associated with the waste that was placed in that roll off, will be written on the Chain of Custody,

Copies of the analytical will be placed in the individual batch treatment folders associated with the waste that was disposed of in that roll off.

##### Oily Water Waste Sludge

Oily water waste sludge will be analyzed annually to maintain an accurate profile. IWOW operators will collect a waste sample and submit sample to the lab for analysis, accompanied by a properly completed chain of custody. The oily water waste sludge shall be analyzed to determine the Soluble Threshold Limit Concentration (STLC) using the California Waste Extraction Test (WET) for lead and copper. Periodically, the sludge will require analysis for all heavy metals by TCLP to verify compliance to regulatory limits, as well as Total Solids to demonstrate volume reduction.

#### 7. Arranging for Container Pickup and Delivery

All waste sludge will be disposed of through a waste contractor designated by the Defense Logistics Agency (DLA) contract. The DLA arranges for waste disposal upon receipt of a 1348 form. A representative will complete the 1348 using the EWBATS system, all 1348s for the IW sludge will include all of the batch numbers that are applicable to the waste that was placed into that bin. A Representative will then inform the Navy RO that all necessary information regarding waste disposal is in the EWBATS system and request their approval for disposal. After the RO has approved the request, a representative will prepare an appropriately completed 1348 form using the EWBATS system; print, sign, and email the 1348 to the DLA. The 1348 must include a CLIN provision for return of the empty waste bin. The DLA will assign a delivery order number to the submitted 1348, and an estimated date for waste pickup. Within 1 to 2 weeks the DLA will provide a final scheduled pickup date. After the waste is collected, the empty, cleaned roll offs are returned in 2 to 5 days.

**IWOW Operators must ensure that the containers ordered for each waste steam are used for their specified purposes and no commingling of waste occurs.**

#### 8. DOCUMENT MANAGEMENT FOR THE DELIVERY ORDERS (DO)

For all DOs a file will be created and maintained. Included in the DO folders will be copies of the analytical (if applicable), the approved 1348s, the DO itself, and the Bin inspection forms, manifests, and LDR (if applicable). The folders will be organized by the DO number and

separated for different bases (if applicable). These folders will be maintained by the Operator Representative who completed the 1348s, and will be filed in the EPS office in Building 788.

## 9. PROCEDURES DURING PICKUP/DELIVERY

The DLA representative will escort the waste removal contractor to inspect the container to ensure it can be removed from the site (i.e., not leaking or otherwise damaged). The waste removal contractor will prepare the uniform hazardous waste manifest and land disposal restriction notification/certification documents. A representative shall review the manifest for completeness and accuracy, and sign the manifest under block #16, if acceptable. The DLA representative and the waste contractor will proceed to the weigh station to obtain final weight. Appropriate copies of the manifest, and a copy of the LDR, shall be retained by the Operator representative and provided to the IWOW manifest coordinator and IWOW operator for management of copies for their respective files. The management of manifest copies shall be conducted in accordance with SOP IWOW-027, Procedures for Management of UHWM. (See **Enclosures 4 and 5** for inspection of returning empty bins, and pre-ship loaded bins, respectively)

## 10. FILING OF THE MANIFESTS

Filing of the manifests, for the pick up of the wastes accumulated in the roll off bins, will be consistent with IWOW-027. In addition to following the procedures in IWOW-027, a copy of each manifest will be placed in the individual batch treatment folders associated with the waste that was disposed of in that roll off (See **Enclosure 6**)

## 11.0 STORAGE VARIANCE REQUEST

In the event a waste container exceeds the allowable 1-year storage period, both verbal and written notification to the Department of Toxic Substances Control (DTSC) must be sent for a storage variance request. As soon as any IWOW representative is aware of a condition requiring this action, the Region Environmental Compliance staff shall be verbally informed and by submission of a draft letter requesting the storage variance. The official request shall be transmitted to DTSC through the Region office to ensure the appropriate notifications are conducted.

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# Standard Operating Procedure IWOW-018

## TITLE: Emergency Diesel Generator Inspection and Testing

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**References:** (a) Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines (17 CCR 93115)

**Enclosures:** (1) Emergency Generator Testing List (OTH-100)  
(2) Emergency Generator Testing Work Proposal(OTH-101)  
(3) PPE Requirements for specific operations/tasks(OTH-01)

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### 1. PURPOSE:

To provide procedures for the periodic operational testing of the emergency diesel generators.

For the operators not previously involved in the operation they shall, at a minimum, review the PPE requirements in **OTH-01**.

### 2. ACTION:

This procedure applies to Operator IWOW Personnel.

### 3. PROCEDURE

#### 3.1 Monthly Testing

The emergency diesel generators specified in **Enclosure (1)** shall be tested for proper operation on a monthly basis according to the following tasks:

1. Inspect the fuel tank level to ensure adequate supply and order fuel as necessary.
2. Inspect diesel engine oil level. Add if required.
3. Inspect radiator fluid level. Add if required.
4. Inspect battery fluid level. Add distilled water if required.
5. Insure main breaker on generator panel is closed. Note this breaker is normally closed.
6. Open main breaker on main power panel or Automatic Transfer Switch (ATS). This de-energizes city power. NOTE: As soon as the breaker is opened, the diesel generator will start. Let it come up to speed. Operate the diesel generator 15-30 minutes.
7. Check the operating condition of the emergency diesel generator during operation.
8. Upon completion test run (run time 15-30 minutes), close the main breaker on the main power panel, or ATS. This will cause city power to be restored. The diesel generator will continue to run until a timed cool-down cycle has been completed; then the unit will shut down.
9. As required by the Air Pollution Control District (APCD) permit requirements, the operational time must be recorded in the logbook found on site.

### 3.2 Annual Testing

The emergency diesel generators shall be tested per **Enclosure (1)** on an annual basis.

#### 3.2.1 Static Inspection.

1. Complete a comprehensive inspection of condition and appearance of the assembly, its installation, enclosure, wear, corrosion and overall operations in accordance with manufactures specifications and industry standards. All conditions will be reported.
2. Inspect for coating and paint conditions. Identify and report deficiencies for repair.
3. The engine block heater and appurtenances will be inspected for operation and condition.
4. Inspect and clean batteries, electrolyte levels, electrolyte specific gravity, and condition for recharging or replacement
5. Aboveground fuel tanks and/or power supplies will be inspected for condition, wear, and defects. The fuel cell condition and level will be reported.
6. Fuel transfer and governor system linkage will be inspected and tested for operation and condition.
7. Fuel will be tested for the evidence of water contamination
8. Equipment will be checked for fuel, oil, coolant leaks.
9. Air filter assemblies and components will be inspected and housings checked for conditions and operations.
10. Coolant assemblies and components will be inspected and housings checked for conditions and operations. A coolant test will be performed. Coolant will be sampled and tested.
11. Belts, hoses, vibration control elements will be inspected and maintenance/replacement identified as necessary.
12. Wiring, electrical connections, and harnesses will be inspected and maintenance/replacement identified as necessary.
13. Lubricate Automatic Transfer Switch
14. Operators will be instructed on recommended and required operations and maintenance procedures between quarterly inspections.
15. Inspect all gauges, switches, component brackets and supports.

3.2.2 Dynamic Inspection (total run time up to 1 hour).

1. Inspect the system components (emergency generators and ATs) listed in the static condition under dynamic operation and test the complete power generation and distribution system.
2. Inspect operation (normal and operational ranges per manufacture) and record readings of gauges, check voltage and frequency outputs, test engine and mechanical shutdowns.
3. Inspect overall condition of the unit and components for vibration and noise. Inspect and test noise and vibration controls.
4. Perform and complete the work in this release in conjunction with the work described in the NAIT proposal [**Enclosure (2)**] in accordance with manufacturer specification, operation and maintenance, Navy standards, and applicable industry standards.

**3.3 APCD Compliance**

As of January 1, 2006, emission standards per reference (a) shall limit allowed preventative maintenance (PM) and testing hours of emergency diesel generators to less than 20 hours per year, using EPA default emission criteria. As a result, the maximum monthly and quarterly testing duration can not exceed 100 minutes per test.

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# Standard Operating Procedure IWOW-019

**TITLE: Jar Test Training Basics**

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**References:** (a) How to Properly Characterize, Jar Test, Treat, and Discharge Full Tanks at the North Island Industrial Waste Treatment Plant (IWTP), SOP IWOW-011  
(b) Operator, MSDS Book  
(c) HACH DR 2700 Spectrophotometer Manual  
(d) *Industrial Waste Treatment – Field Study Training Program* Textbook  
(e) *Treatment of Metal Wastestreams – Field Study Training Program* Textbook

**Enclosures:**

(1) PPE Requirements for specific operations/tasks (OTH-01)

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**1. PURPOSE**

Outline basic principles of bench scale treatment (jar testing) and how this can be applied to treating full tanks at the IWTP. This SOP details how to run two of the most common jar testing procedures for chrome and mixed metals waste streams.

For operators not previously involved in this operation they shall, at a minimum, review the PPE requirements in **OTH-01**.

**2. ACTION**

This procedure applies to all IWOW Operators.

**3. TOOLS**

- Handheld pH meter/ pH paper (1-14 pH scale) OR Orion Star A211 pH Benchtop pH meter
- Electronic laboratory scale
- Micropipettes 1 & 0-10 mL
- pH calibration solutions pH 4, pH 7, and pH 10
- Jar Tester
- HACH DR 2700 spectrophotometer
- Six station stirrer
- 6 – 100 mL beakers
- 4 – 1,000 mL beakers
- 8Micron filter paper (folded filter circles)
- Operator **“Metals Only”** plastic sampling bottles
- Stopwatch
- 6 small plastic funnels
- Safety glasses
- Nitrile gloves
- 1 liter separatory funnel

- Ring Stand
- 2 burettes (25 mL)

#### 4. MATERIALS

| Laboratory Jar Testing        |                                  |
|-------------------------------|----------------------------------|
| Item                          | Minimum Stocking Quantities      |
| Sulfuric Acid 95-98%          | 1 liter                          |
| Sodium Hydroxide 50%          | 1 liter                          |
| Dower DWT-6285                | 200 milliliters                  |
| Dower DWT-672E                | 2% & 4% Volume percent solutions |
| Sodium Bisulfite              | 500 grams                        |
| Hydrogen Peroxide             | 100 milliliters                  |
| Ferrous Sulfate               | 500 grams                        |
| Hill Brothers (Metal Grabber) | 500 milliliters                  |
| Calcium Hypochlorite          | 500 grams                        |

This training document includes two jar test treatment protocols for chrome and mixed metals along with treatment sheets to document the jar test runs. The two jar test protocols included in this document take about 5-6 hours to conduct with filtering of samples. Read your *Industrial Waste Treatment— Field Study Training Program* textbook, Chapter 8, Volume 1 before doing a jar test for the first time.

#### 5. PURPOSE OF JAR TESTING (FOR FURTHER INFORMATION READ REFERENCE (F) – PAGES 362-371)

Some batch waste streams are not easily treated with established treatment procedures. Bench scale treatment (jar testing) is a means to treat small sample quantities of waste in the laboratory to help determine the most cost effective way of treating a large quantity of material. It is often necessary to test different dosages of a treatment chemical to obtain the best performance for effluent discharge considerations at the minimum amount of cost.

For jar testing trial tests to be effective in predicting the treatment results of large scale batches, an operator must conduct jar test procedures with care in detail. Key variables in reliability of jar test results include the following: representative fresh samples of waste stream, accurate record keeping, and good laboratory skills.

#### 6. REPRESENTATIVE SAMPLES

Make sure the sample taken for jar testing reflects the reality in the batch treatment tank. If possible agitate the batch treatment tank before sampling. If oil or solids are present in the sample do not remove these constituents from the sample unless this can be replicated in the treatment plant. Always make sure the samples taken from a batch tank are fresh and the analytical data for the sample reflects this reality.

Similarly, use the same treatment chemicals for jar testing as one would use for full scale treatment in the plant. Do not substitute laboratory grade chemicals for treatment grade materials since their relative higher purity may cause slightly different results.

#### 7. ACCURATE RECORD KEEPING

Good record keeping is essential. Make sure to note how a jar treatment was performed. If there are any deviations in a jar treatment protocol, note them so that the cause of an unexpected analytical result can be understood. Take pains to clearly label the jar treatment jars and the subsequent laboratory samples.

## 8. GOOD LABORATORY SKILLS

Take pains to rinse your laboratory glassware with deionized water after cleaning with soap and water. Precisely measure, dispense, and record the quantities of treatment chemicals used in a jar test procedure. When conducting a series of jar tests, make sure the application of chemicals, mixing of materials, and filtering of liquids is consistent and as uniform as possible.

## 9. PRACTICAL GUIDE FOR SUCCESSFUL JAR TESTS

1. Obtain representative samples and analyze for constituents that require treatment prior to jar testing.
2. When standard treatment procedures don't yield satisfactory results – try varying dosage of treatment chemicals and order of treatment steps – be sure to document how and what was done.
3. Take time and do not rush a jar test. Analytical results can easily be influenced by slight changes in treatment conditions – some for the good, others for the bad. To avoid wasted effort focus on the jar test work and don't let other work distractions impact your effort.
4. Properly document your jar test work. Make notations and observations that are clear even to other people who may need to continue or try to reproduce your results.

## 10. IMPORTANT TOOLS AND TECHNIQUES

### 10.1 Stopwatch

The two stopwatches with preset count-down timers and alarms are extremely helpful in conducting the two jar test protocols provided in this document. Use these stopwatches to accurately pace the various steps of the treatment process.

### 10.2 pH Testing

Accurate measurement of pH conditions is essential for successful jar test results. Calibrate your pH measuring equipment prior to any jar test with standard reference buffers. Deviations in pH conditions often explain apparent anomalous results. When in doubt test the pH of a treatment solution and see if the pH conditions conform to the steps in the procedure. pH test paper should not be substituted for pH measurement equipment.

### 10.3 Filtering

In analyzing for dissolved metals, be sure to filter your sample adequately before submitting sample for laboratory analysis. Whenever possible a clear and transparent sample for dissolved metals analysis is needed for discharge purposes. Here are a few tips on filtering –

- a) Fold filter paper into halves and then into quarters with clean creases.
- b) Insert the filter paper into the plastic filter cone and carefully wet the paper so that the paper adheres to the cone.
- c) Solids on the filter paper help the filtration process. Judge the quality of the filtrate and not the amount of solids that end up on the filter paper.
- d) When in doubt re-filter the filtrate a second or third time to remove residual solids. Be uniform in your application of filtering completed jar test runs – especially those involving dosage.

## 11. PRACTICE

Now try your hand at the jar testing. The two test exercises are included at the end of this SOP:

### Exercise No. 1: Jar Testing of Mixed Metal Wastes (Acidic Ferrous Sulfate Addition)

**Exercise No. 2: Jar Testing of Chrome Wastes (Sodium Bisulfite Treatment)**

Both of these tests can be used with mixed metal and chrome waste streams. Don't be afraid if something appears to go wrong. If you have any questions consult with someone who has performed the jar test procedure.

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## Exercise No. 1: Jar Testing of Mixed Metal Wastes (Acidic Ferrous Sulfate Addition)

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1. Submit a sample of the untreated material to the Analytical Laboratory Service Center (ALSC) for a SW-846 6010B test of seven metals – total chrome, cadmium, copper, lead, nickel, silver, and zinc. Amend this analytical request if incoming waste profiles or other information – indicated other heavy metals are likely to be excess of 10 PPM.
2. While waiting for laboratory analysis for metals – treat for hexavalent chromium on the basis of total metals either in the batch tank as described in **reference (a)**. Alternatively hexavalent chromium may be performed as a preparatory step to jar testing in the lab – refer to step 3 – optional hexchrome treatment.

Note: If total chrome is greater than 85% of the total metals, use the chrome treatment (alkaline aluminum) procedure.

3. Draw off a two liter sample from the batch tank for jar testing. Fill two one liter beakers from the jar test apparatus each with 800 milliliters of sample solution.

### Hexavalent Chromium Treatment (if required)

If the samples have not yet been treated for hexchrome, lower the pH to less than 3 with sulfuric acid – add quantity of sodium bisulfite prescribed on the **800 milliliter jar test** column, shown on **Enclosure 1: Hexavalent Chromium Treatment, Sodium Bisulfite Dosage Table**. If waste has already been treated for hexavalent chromium in the batch tank – proceed to step 4.

4. Draw off a two liter sample from the batch tank for jar testing. Fill two one liter beakers with 800 milliliters of sample solution and place in the jar testing apparatus. Lower the pH in the sample beaker to less than 2.7 pH units with sulfuric acid. Add 7 grams of ferrous sulfate slurred in 150 milliliters of water to both beakers. This addition of ferrous sulfate may raise the pH above 3. If necessary add sulfuric acid to lower the pH to less than 3. Agitate the beakers in the jar test apparatus for 2 hours at 60% power setting. Check these tasks as they are completed on the *Jar Test Mixed Metal Treatment Sheet* included in this exercise.
5. Raise the pH of the solution in the beaker with sodium hydroxide to the range of 8.5-9 pH units. Add metal grabber proportionate to the total metals concentration (see **Enclosure 2: Mixed Metal Treatment, metal grabber table**) in the first beaker. Add half the amount of metal grabber added to the second beaker. Mix both beakers for 2 hours. Enter the quantity of sodium hydroxide required to raise the pH to 8.5-9 and the quantity of metal grabber added to each beaker. Record the amount of sodium hydroxide and metal grabber added to the beaker on the *Jar Test Mixed Metal Treatment Sheet* included in this exercise.
6. Add 1 milliliter of DWT-6285 to each mixer and continue mixing for 1 hour.
7. Add 1 milliliter of DWT-627E solution to each mixer and mix for 20 minutes.
8. Turn off mixers and raise the agitator blades out of solution and allow the metal hydroxide salts to fall out of the solution. If no appreciable settling has occurred after two hours consult the Plant Chemist/Operations Officer.
9. Filter 200 milliliters supernatant liquid in each beaker with 5 micron filter paper and place the filtrate from each beaker in **“Metals Only”** plastic sampling containers from the ALCS containing nitric acid (HNO<sub>3</sub>) preservative. Submit the jar test samples for analysis with a chain of custody form for Total Cr (Chrome), Ag (Silver), Cd (Cadmium), Cu (Copper), Ni (Nickel), Pb (Lead), and Zn (Zinc).
10. Upon receiving the analysis report from the laboratory, check to see if all the soluble metal concentrations in from the material treated in both jar tests are less than or equal to daily maximum to the effluent metals concentration limits for connection #120 as indicated in **reference (a)**.

If both jar tests pass the discharge limits, proceed to full scale treatment, and use half the metal grabber proscribed on the dosage table. If only the higher metal grabber dosage jar test passes the discharge limit, then proceed to and use the full amount of metal shown on the dosage table.

If both jar tests fail the discharge limits, for total chrome, check for hexavalent chrome with the HACH spectrophotometer. If hexavalent chrome is in excess of 1 ppm go to step 4 and retreat with additional sodium bisulfite. If hexavalent chrome is already less than 1 ppm, try a jar test with the chrome/mix metals **reference (a)**. If this jar test series is also unsuccessful, consult the Plant Chemist/Operations Officer for further direction.

### Jar Test Mixed Metal Treatment Sheet (Acidic Ferrous Sulfate Addition)

#### Tank or Source of Waste Material

JAR 1:

JAR 2:

**Note:** If batch tank has not been batch treated for hexavalent chromium with sodium bisulfite, complete this task; otherwise add sodium bisulfite treatment to jar testing study preparatory work. **Reference (a)** indicates the quantity of sodium bisulfite to add to jar of 800 milliliters of untreated mixed metals or chrome waste whose pH is less than 2.8 pH units. Stir solution for 1 hour in jar test apparatus before beginning rest of jar test study.

#### Jar Test Study

Operator Initials

Date

a) pH of Jar #1 and Jar #2 lowered to 2.5-2.87 pH units? (check)

b) Amount of Sulfuric Acid added in milliliters

Jar #1

Jar #2

c) 7 grams Ferrous Sulfate slurried in 150 mL of water added to

Jar #1

Jar #2

Mix Jar #1 for one hour.      Time Started:              Time Ended:

Mix Jar #2 for one hour.      Time Started:              Time Ended:

d) Amount of Sodium Hydroxide added in milliliters to raise pH 8.5-9

Jar #1

Jar #2

e) Amount of metal grabber added in milliliters

Jar #1

Jar #2

f) Mix Jar #1 and Jar #2 for two hours

Time Started:              Time Ended:

g) 1 milliliter of DWT-6285 added; Mix 1 hour (check)

Jar #1

Jar #2

h) 1 milliliter of DWT-627E added; Mix 20 minutes (check)

Jar #1

Jar #2

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## Exercise No. 2: Jar Testing of Chrome Wastes (Sodium Bisulfite Treatment)

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1. Submit a sample of the untreated material to the ALCS for the seven metals – total chrome, cadmium, copper, lead, nickel, silver, and zinc. Amend this analytical request if incoming waste profiles or other information indicate the presence of other heavy metals that are likely to exceed 10 ppm.
2. While waiting for laboratory analysis for metals – treat for hexavalent chromium on the basis of total metals either in the batch tank as described in **reference (a)**. Alternatively hexavalent chromium may be performed as a preparatory step to jar testing in the lab – refer to step 3 – optional hexavalent chrome treatment.

**Note:** If total chrome is less than 85% of the total metals, use the mixed metal treatment procedure.

3. Draw off a two liter sample from the batch tank for jar testing. Fill two one liter beakers from the jar test apparatus each with 800 milliliters of sample solution.

### Hexavalent Chromium Treatment (if required)

If the samples have not yet been treated for hexavalent chrome, lower the pH to less than 3 with sulfuric acid – add quantity of sodium bisulfite proscribed on the **800 milliliter jar test** column, shown on **reference (a)**: Hexavalent Chromium Treatment, Sodium Bisulfite Dosage Table. If waste has already been treated for hexavalent chromium in the batch tank – proceed to step 4.

4. Lower the pH of the solution of each beaker with sulfuric acid to the range of 8.5-9 pH units. Add metal grabber proportionate to the total metals concentration and mix for 2 hours. Enter the quantity of sulfuric acid needed to lower pH to 8.5-9 and the quantity of metal grabber added to each beaker. Record amounts of sulfuric acid and metal grabber added to each beaker on the Jar Test Chrome Treatment Sheet included in this exercise.
5. Weigh up two 7 grams of ferrous sulfate on clean filter paper with the laboratory scale. Slurry the two portions the ferrous sulfate in separate 100 milliliter beakers containing 50 milliliters of deionized water. Add one of ferrous sulfate slurry portion to Jar #1 and Jar #2. Raise the pH back to 8.5-9 with sodium hydroxide after ferrous sulfate addition. Mix the two jar test beakers with the ferrous sulfate added for thirty minutes at 60% power.
6. Add 1 milliliter of DWT-6285 to each mixer and continue mixing for 1 hour.
7. Add 1 milliliter of DWT-627E solution to each mixer and mix for 20 minutes.
8. Turn off mixers and raise the agitator blades out of solution and allow the metal hydroxide salts to fall out of the solution. If no appreciable settling has occurred after two hours consult the Plant Chemist/Operations Officer.
9. Filter 200 milliliters supernatant liquid in each beaker with 5 micron filter paper and place the filtrate from each beaker in **“Metals Only”** plastic sampling containers from the ALCS containing nitric acid (HNO<sub>3</sub>) preservative. Submit the samples for the two jar tests for analysis with a chain of custody form for Total Cr (Chrome), Ag (Silver), Cd (Cadmium), Cu (Copper), Ni (Nickel), Pb (Lead), and Zn (Zinc).
10. Upon receiving the analysis report from the laboratory check to see if all the soluble metal concentrations in the liquids with Jar Test #1 and Jar Test #2 less than or equal to daily maximum to the effluent metals concentration limits for connection #120 as indicated in **reference (a)**.

If either one of jar test analyses passes discharge limits, select the one that passes the discharge limit. If both jar tests pass the discharge limit, select the non-aluminum treated one for full scale treatment.

If neither of the jar tests passes the discharge limits, for total chrome, check for hexchrome with the HACH spectrophotometer [See **reference (c)**]. If hexavalent chrome is in excess of 1 PPM go to step 4 and retreat with additional bisulfite. If hexavalent chrome is already less than 1 PPM, consult the Plant Chemist/Operations Officer for further direction.

### Jar Test Chrome Treatment Sheet

#### Tank or Source of Waste Material

JAR 1:

JAR 2:

**Note:** If batch tank has not been batch treated with sodium bisulfite for hexavalent chromium, complete this task; otherwise add bisulfite treatment to jar testing study preparatory work. **Reference (a)** indicates the quantity of sodium bisulfite to add to jar of 800 mL of untreated mixed metals or chrome waste whose pH is less than 2.8 pH units. Stir solution for 1 hour in jar test apparatus before beginning rest of jar test study.

#### Jar Test Study

Operator Initials

Date

a) pH of Jar #1 raised to 11.5-12 pH units? (check)

b) Amount of caustic added to Jar #1 to reach pH 11.5-12 (        ) mL

c) Amount of Sulfuric Acid added in milliliters to reach pH 2,5

Jar #1

Jar #2

d) Amount of Sodium Bisulfite added in grams

Jar #1

Jar #2

e) Mix Jar #1 and Jar #2 for two hours

Time Started

Time Ended

f) Seven (7) grams Ferrous Sulfate added; Mix 30 minutes (check)

Jar #1

Jar #2

g) Mix Jar #1 and Jar #2 for two hours

Time Started:

Time Ended:

h) Amount of NaOH added to Jar #1 to reach pH 11.5-12 (        ) mL

i) Amount of Metal Grabber added in milliliters

Jar #1

Jar #2

j) Mix Jar #1 and Jar #2 for two hours

Time Started:

Time Ended:

k) 1 milliliter of DWT-6285 added; Mix 1 hour (check)

*Jar #1*

*Jar #2*

l) 1 milliliter of DWT-267E added; Mix 20 minutes (check)

*Jar #1*

*Jar #2*

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## Standard Operating Procedure IWOW-020

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### TITLE: Waste Acceptance Criteria for Bilge and Oily Waste Treatment Systems

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- References:**
- (a) California Health and Safety Code, Division 20, Chapter 6.5, Section 25200.3(a)
  - (b) California Code of regulations, Title 22, Section 66261.21, 22, 23 and 24(a)(1)(B)
  - (c) Federal Code of Regulations, Title 33, Section 154 and 156
  - (d) Code of Federal Regulations, Title 40, Section 403
  - (e) Industrial Users Discharge Permit (IUDP) Discharge Permit 08-0018
  - (f) Industrial Users Discharge Permit (IUDP) Discharge Permit 11-0016
  - (g) Industrial Users Discharge Permit (IUDP) Discharge Permit 08-0009
  - (h) Industrial Users Discharge Permit (IUDP) Discharge Permit 08-0490
  - (i) San Diego Municipal Code, Division 5, Section 64.0500
  - (j) IWOW-022 Waste Acceptance Form
  - (k) IWOW-003 Waste Transfer to BOWTS
  - (l) IWOW-021 Waste Acceptance Procedure and Criteria Industrial Waste
  - (m) IWOW-045 Recovered Oil/Fuel Oil Disposition as Exempt Used Oil, Fuel Oil Recovered (FOR) or Waste Oil
  - (n) IWOW-050 Oily Waste & Industrial Waste Discharge Permit Self- Monitoring and Reporting Requirements
  - (o) Specification MIL-F-24951B Fuel Oil Reclaimed

- Enclosure:**
- (1) Table 1: Acceptable and Unacceptable Waste Summary Table ([TAB-12](#))
  - (2) Table 2: Unacceptable Concentration Limits at the BOWTS ([TAB-13](#))
  - (3) Table 2: Acceptable Concentration Limits at the BOWTS ([TAB-13a](#))
  - (4) Table 3: Constituent Concentration Limits to Determine if Oil is Waste Oil or Recyclable Oil ([TAB-14](#))
  - (5) BOWTS Waste Acceptance Log ([OTH-33](#))

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- (6) Waste Determination Worksheet (OTH-129)
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#### 1. PURPOSE

To provide guidance on evaluating oily wastewaters for acceptance and treatment at the Bilge and Oily Waste Treatment System (BOWTS).

#### 2. ACTION

All (Operator) Personnel

#### 3. QUALIFICATION AND TRAINING REQUIREMENTS

At a minimum, all staff responsible for implementing work covered by the SOP must read and understand its contents, and sign a Document Review Training Record (**TR-10**), in accordance with SOP **IWOW-051**.

#### 4. BASIS FOR WASTE ACCEPTANCE CRITERIA

- 1. The BOWTS are oily waste treatment facilities that are required to comply with federal, state and local regulations [See **references (a) through (d)**] and meet permit conditions [See **references (e) through (i)**]. The BOWTS facilities operate under a grant of Conditional Authorization pursuant to Health and Safety Code section 25200.3 (**reference a**). This grant

of Conditional Authorization is documented by permits issued to the facilities by the County of San Diego Department of Environmental Health; the Department of Toxic Substances Control authorized Certified Unified Program Agency for San Diego.

2. Discharges of treated water from the BOWTS must meet the San Diego Municipal Sewer System Publicly Owned Treatment Works (POTW) Discharge limits, see **references e-i**.
3. Acceptance of some oily wastes is limited based on maintaining effective treatment capability and capacity at the BOWTS. Acceptance of large quantities of fuel oil in the oil/water mixture is limited on this basis, as are prohibitions on accepting synthetic oil and chlorinated hydraulic oils, and some other agents identified in the SOP that could interfere with the treatment process. If there are questions on acceptable wastes, notify the Plant Chemist/Operations Officer.
4. Bilge water, water mixed with fuel, and ballast compensation water (comp water) are acceptable wastes at the BOWTS. Also accepted are oil and water containing oil (i.e., rinse water from tank cleaning activities where no detergent was used, water from oil-water separators, sumps, clarifiers, and car washes) if it meets the following criteria, summarized on **Table 1**, and within the concentration limits specified in **Table 2**:
  - a. Only oily wastes generated by activities on Naval Base San Diego can be received by NBSD BOWTS; only waste generated at the Naval Base Point Loma can be accepted at the NBPL BOWTS; only waste generated at the Naval Amphibious Base can be accepted at the NAB BOWTS; however non-hazardous waste can be accepted at all facilities.
  - b. Waste must be **only** oil mixed with water and oil–water separation sludge.
  - c. The waste must have a pH > 2.0 and < 12.5.
  - d. The waste must have a flashpoint > 140° F.
  - e. The waste must be non-reactive.
  - f. Waste must contain < 10% TOC and < 1% VOCs (10,000 ppm).
  - g. The waste must not have concentrations that would make it a RCRA toxic characteristic waste.
  - h. Oil/water mixtures or separation sludges may contain only trace amounts of benzene less than the RCRA-limit of 0.5 mg/L.
  - i. The waste must not contain or be derived from RCRA-listed waste (F-, P-, U-, or K-Coded waste identified specifically in the listings in 22 CCR 66261, Article 4). This means that the waste cannot contain spent solvents or off-spec material designated under RCRA. The Plant Chemist/Operations Officer should be consulted for clarification, as needed.
  - j. AFFF can be accepted if anti-foam agent is added at NBC and NBSD only by truck or container but never through risers. AFFF is never accepted at NAB and NBPL.

**5. Prohibited Waste for treatment at the BOWTS**

- a. The following wastes cannot be accepted at BOWTS facility. These prohibitions are summarized on **Table 1**. A discussion of disposition options is provided in **Subsections 15 and 16** of this SOP.
  - Sanitary Waste.

- Any amount of low-flashpoint fuels (flashpoint < 107°F).
- Gasoline-impacted water with a benzene concentration  $\geq 500$  ppb (0.5 mg/L); such wastewater meets the characteristic of hazardous waste.
- Synthetic Oil in quantities greater than 100 gallons per load.
- Hazardous waste, including any amount of solvents (discarded and used for solvent properties – F-listed waste).
- Bilge water contaminated with gasoline, or solvents.
- AFFF without anti-foam agent discharged directly into the BOWTS POTW port down line.
- AFFF or tank cleaning detergents via the riser. The foam causes fouling of sensors and overflowing of processes.
  - i. AFFF with anti-foam is only acceptable via truck.
  - ii. Detergents must be pre-approved or characterized by the Plant Supervisor or Plant Chemist/Operations Officer prior to disposal at the BOWTS.

#### 6. Transfer of Bilge Water/Oily Waste via Riser.

- a. Bilge water is typically accepted under Profile HW-91. The transfer procedures for bilge water via riser are summarized in SOP **IWOW-003, reference (k)**. Bilge water is acceptable if generator-provided information fits the established profile. Operators will assist generators with analytical requirements or field testing if the waste description or generator knowledge is not sufficient based on the Declaration of Inspection (DOI) interview. Generator signature on the DOI documents the generator has process knowledge sufficient to state that the waste is not RCRA hazardous. Operators will try to resolve questions by contacting the Chief Engineer of the vessel or designee. If further review is needed Operators shall contact the Plant Supervisor or Plant Chemist/Operations Officer.

#### 7. Transfer of Compensation Water via Riser.

- 8. Compensation water is typically accepted under Profile NW-93. The transfer procedures for comp water via riser are summarized in SOP **IWOW-003, reference (k)**. Comp water is acceptable if generator-provided information fits the established profile. Operators will assist generators with analytical requirements or field testing if the waste description or generator knowledge is not sufficient based on the DOI interview. Generator signature on the DOI documents the generator has process knowledge sufficient to state that the waste is not RCRA hazardous. Operators will try to resolve questions by contacting the Chief Engineer of the vessel or designee. If further review is needed Operators shall contact the Plant Supervisor or Plant Chemist/Operations Officer. **Transfer of Oily Waste via Truck.**

- a. Waste Material Haulers (Navy contractors or ships force) that intend to dispose of bilge water, comp water, oil/water mixtures, rain water, AFFF, and separation sludges via truck, must first complete a Waste Acceptance Form (WAF) and undergo an truck inspection at the BOWTS prior to picking up the waste at the dock or off-base location. This applies to all routine and non-routine maintenance activities. **Reference (j)** specifies procedures for the WAF.

- b. Operators will review the WAF to confirm that the waste description meets BOWTS Waste Acceptance Criteria. Only non-hazardous waste (accompanied by a Non-Hazardous Waste Manifest) is acceptable at BOWTS facilities from off-base locations.
- c. Prior to waste transport, the generator is responsible for determining what analytical data may be needed, based on their knowledge of the waste generation process, to support the waste determination that the waste is not hazardous.
- d. The Plant Chemist/Operations Officer is available to assist in recommending the appropriate analyses. Generators should contact the Plant Chemist/Operations Officer a minimum of 3 days prior to waste transport to verify analytical requirements and to arrange for testing through the environmental lab at the contractors expense. The generator may use another analytical laboratory certified to the Environmental Laboratory Accreditation Program (ELAP).
- e. The WAF must include documentation that supports the waste characteristics. Acceptable documentation includes the following:
  - i. A waste description that matches a valid waste profile;
  - ii. Analytical data (Title 22 metals, flashpoint, pH, total organic halides, volatile and semi-volatile organic compounds), as appropriate to the waste generation process, for a representative waste sample;
  - iii. MSDS or SDS; or
  - iv. Documentation signed by the generator that, by knowledge of the process that generated the waste and its constituents, the waste neither contains any prohibited constituents nor has any prohibited characteristics.
- f. Generator/Activity Representative's signature on the WAF documents that the generator has process knowledge sufficient to state that the waste is not RCRA hazardous.

#### **9. Scheduled Bulk Waste via Truck. .**

- a. Transfers of bilge water, comp water, oily waste, and bilge water contaminated with foaming agents (AFFF or detergent) requested by a Navy command, or designee, will schedule truck service by the IWOW Scheduler at least 24 hours in advance, if possible, through the DRMO Bulk Pumping contract. Transfers should occur during designated facility operating hours (see **reference k**). Scheduled waste will be accompanied by an approved WAF, shipping manifest (if required) and Bulk Pumping Notice (BPN) which shall contain the waste description, generator point of contact, waste generating location, and disposal facility, along with other relevant information.

#### **10. Cost Estimating.**

- a. BOWTS Operators will monitor volume (in gallons) transferred both via pipeline and truck. All waste treatment charges will be incurred by the generator based on the waste profile and the volume reported on the DOI or WAF. If the reported volume differs from the volume monitored by the Operator, the Operators will try to resolve the difference with the generator who estimated the initial volume on the DOI or WAF. The monitored volume will be the primary basis for waste treatment charges incurred by the generator.

#### **11. Documentation of Waste Characterization.**

- a. BOWTS Operators maintain documentation that waste is adequately characterized to meet the criteria for acceptance at a conditionally authorized treatment system per HSC 25200.3.
- b. Vessel bilge water, oily waste and comp water – Profiles have historically been established for the wastes typically found in vessels that are routinely serviced at NBSD, NBPL and NAB. Documentation proving generator knowledge of these waste streams is provided during the Declaration of Inspection (DOI) pre-transfer conference. The BOWTS Operators document and verify the waste quantity and identity as reported by the generator in the Facility DOI or WAF.
- c. Analytical data characterizing the waste, generator certification of the waste characteristics based on process knowledge, or MSDSs for contaminants in the waste, must be submitted with a DOI or WAF if required. BOWTS Operators will attach this supporting documentation to the copy of the DOI or WAF retained in the facility logs or files.
- d. All profile information and generator knowledge will be kept on file with the WAFs for three years.

## 12. Waste Characterization Verification.

- a. BOWTS Operators interview generators as part of the Facility DOI documentation or pre-transfer conference. Operators will attempt to resolve questions about the waste generation process to confirm that the waste may be accepted for treatment. Questions about acceptable waste will be directed to the Plant Supervisor or Plant Chemist/Operations Officer.
- b. The Plant Supervisor or Plant Chemist/Operations Officer may require that the generator provide analytical data or additional supporting documentation on the waste for review. If the sample results or additional documentation indicate that the waste is unacceptable due to presence of RCRA-hazardous waste or other prohibited substances, the waste will be held for transfer and treatment at the RCRA-permitted ORP at NBCNI or other suitable disposal location. BOWTS personnel will periodically take waste samples on a random basis and perform analysis, based on a schedule outlined in the Waste Analysis Plan, to confirm generator documentation of generator knowledge.
- c. If a new waste stream is approved for treatment at the BOWTS, the Plant Chemist/Operations Officer will prepare a Waste Determination Worksheet (**OTH-129**), **Enclosure 6**. This will accompany the waste transport document, DOI or WAF.

## 13. Hazardous Waste Manifesting.

- a. If the waste is determined (by the generator via analytical or MSDS, or by the BOWTS Operator) to be RCRA-hazardous, it will be manifested - with appropriate waste identification codes - and transported to the IWOW/ORP for treatment (if acceptable), or to an off-site facility using the DRMO contract. See SOP **IWOW-21**, **reference (k)** for applicable Waste Acceptance Criteria.

## 14. Waste Treatment Log.

- a. The volumes and types of waste accepted on a daily basis for treatment are documented on the Waste Flow Log by the Operators and tracked for billing purposes in the Environmental Waste Billing And Tracking System (EWBATS) database by the IWOW Scheduler. Volume and waste type information is derived from WAFs and DOIs.

### 15. Disposition Options Assistance.

- a. BOWTS Operators will assist generators in determining appropriate disposition for oil-water mixtures and oil-water separation sludges. The IWOW/ORP Manager or Plant Chemist/Operations Officer may approve waste acceptance not covered under these procedures on a case-by-case basis. This exception and the reason for it should be noted in the BOWTS Log (**Enclosure 4**).

### 16. Disposition Options

- a. Below are the disposition options for waste streams prohibited. More detail on accepting fuel oil and used oil for reuse is found in SOP **IWOW-045, reference (m)**.

- i. Sanitary waste

1. Discharge to CHT Riser on the Pier or to the pump station down line from the treatment plant if waste meets sewer discharge limits in **Table 2** (highlighted in grey).

- ii. Off-spec fuel/high oil-content bilge water

1. To dispose of large volume of off-spec fuel or high oil-content bilge water, contact the Plant Chemist/Operations Officer at least 3 working days before the desired off-load date for disposal guidance. Depending on the volume of off-spec fuel or high oil-content bilge water, the waste may require disposal to NBCNI ORP or other suitable disposal location. Guidelines for maximum fuel amounts in the bilge water at each oily waste treatment facility are as follows:

- a. 80,000 gallons **of fuel** in the bilge water..... NBCNI, NBSD
- b. 10,000 gallons **of fuel** in the bilge water..... NBPL
- c. 4,000 gallons **of fuel** in the bilge water..... NAB

2. The Plant Supervisor or Plant Chemist/Operations Officer should be contacted to provide additional guidance to facilitate waste acceptance services.

3. Bilge water exceeding maximum fuel loads or have high oil content may be tested and sent to Fleet Industrial Supply Center (FISC) for oil recovery. Sampling of each batch to verify that it meets the purity standard for exempt used oil is needed for acceptance as exempt recyclable oil. If fuel or high-oil content present in the bilge water is characterized as a waste, the generator must pull a sample and send to an environmental laboratory for analyses. The sample must be analyzed for the following:

- Flashpoint 100 °F or greater
- Title 22 metals
- Total halogens (TOX)
- Polychlorinated biphenyls (PCBs)
- Benzene (BTEX)

iii. Low Flashpoint Fuel

1. Low flashpoint fuel, excluding fuel contaminated with MOGAS/AVGAS, with a flashpoint of at least 140°F can be disposed of at NBSD, NAB, or NBPL.
2. Low flashpoint fuel with a flashpoint between 107°F and 143°F that meets the oil purity standards and Fuel Oil Recovered (FOR) criteria in Mil Standard F-25951B is product and may be dispatched to FISC Point Loma after laboratory testing to determine that it meets the required standards. If it does not meet the standard, then it is hazardous waste oil. If it meets Waste Acceptance Criteria at a BOWTS or IWOW/ORP facility then it can be transported accordingly.. See SOP **IWOW-045, reference (m)** for disposition at FOR or subsection 16 of this SOP for required testing.
3. Fuel with a flashpoint over 100 °F may be accepted for disposal as exempt used oil if it meets the purity standard in **Table 3** of this SOP.
4. Fuel with a flashpoint <100 °F or <140 °F and/or contaminated MOGAS that does not meet purity standard cannot be accepted for treatment at NBCNI IWTP/ORP facilities due to fire code issues. Contact the Environmental Protection Specialist at 545-6577 to dispose of this waste as hazardous waste oil with DRMO.

iv. Synthetic and Lube Oil

1. Unused synthetic/lube oil must be processed through FISC HAZMAT (556-6121) for potential reuse.
  2. No synthetic oils will be accepted at NBCNI ORP or NBSD, NBPL, or NAB BOWTS.
- v. Unused AFFF may be accepted by FISC.
- vi. AFFF not treated with anti-foam agent may be containerized for acceptance by Clean Harbors.
- vii. Hazardous oil and water waste mixtures or oil-water separation sludges that have RCRA hazardous waste, including F-listed spent solvents, toxic characteristic constituents above **Table 2, Column 1** concentrations, pH below 2 or above 12.5, are accepted for treatment at the IWTP/ORP facility in accordance with SOP **IWOW-021, reference (I)**. Contact the Plant Chemist/Operations Officer at 545-2208.
- viii. No ignitable waste with flashpoint <140 °F can be accepted for treatment at the BOWTS or IWTP/ORP facilities.
- ix. Waste must be manifested as hazardous waste and have an acceptable WAF. The applicable hazardous waste codes are on **Table 2, Column 3**. Analytical data will typically be required for acceptance.

17. Contact the IWOW Manager at 545-6563 or the Plant Chemist/Operations Officer at 545-2208 with questions or case-by-case directions for accepting other oil and water or oil-water separation sludge at the BOWTS.

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## Standard Operating Procedure IWOW-021

**TITLE: Waste Acceptance Procedure and Criteria: Industrial Waste**

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**References:** (a) SOP IWOW-027 "Procedures for Management of Uniform Hazardous Waste Manifests"  
(b) SOP IWOW-022 "Waste Acceptance Form"  
(c) SOP IWOW-009 "Overall Procedures for Batch Accumulation and Treatment"  
(d) SOP IWOW-023 "Unloading Wastes into IWOW/OWTP at NBCNI"  
(e) California Code of Regulations, Title 22, Chapters 14 and 15  
(f) RCRA Hazardous Waste Facility Permit  
(g) SOP IWOW-067 "IWOW Waste Profiling for Acceptable Waste"  
(h) Waste Analysis Plan  
(i) City of San Diego Industrial User Discharge Permit (08-0018-05-A)

**Enclosures:** (1) Truck Receipt Flow Pattern at NBCNI (MAP-08)  
(2) FRC Profile List (OTH-14)  
(3) IWTP Waste Characteristics (TAB-09)  
(4) ORP Waste Characteristics (TAB-11)  
(5) Guidance for Field and/or Analytical Tests for Wastes (INST-02)  
(6) PPE Requirements for Specific Operations/Tasks (OTH-01)  
(7) Waste Acceptance Form (OTH-05)  
(8) Waste Sampling and Testing Parameters (TAB-16)

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### 1. PURPOSE

To establish procedures and criteria for the Operators, Lead Operator, Plant Chemist/Operations Officer and the IWOW Manager to accept waste for treatment at the Naval Base Coronado, North Island (NBCNI) Industrial Waste and Oily Waste (IWOW) facility.

### 2. ACTION

This procedure applies to Operator NBCNI IWOW operators, lead operators, and the manager.

### 3. BACKGROUND

The NBCNI IWOW facility is regulated as a hazardous waste treatment facility under a RCRA Part B Permit issued by the California Environmental Protection Agency, Department of Toxic Substances Control, **reference (f)**. This hazardous waste treatment permit is subject to the California Code of Regulations, Title 22 (22 CCR), Chapter 14 and 15, **reference (e)**.

The Industrial Waste Treatment Plant (IWTP) at the NBCNI IWOW facility is designed to treat a variety of waste streams, such as phenol/general organic wastes, mixed metals, contaminated oil waste, cyanide, chrome and other heavy metal containing wastes, as well as general industrial wastes. Additionally, groundwater and pretreated groundwater from remediation of various solid waste management units may also be processed through the IWTP. The general industrial waste stream may also include detergent mixtures from aircraft wash racks. Phenol/general organic wastes, mixed metals, contaminated oily wastes, cyanide, and chrome wastes are delivered by truck and pumped into the dedicated batch processes.

The NBCNI IWOW Oil Recovery Plant (ORP) is used to accept oily wastewater and generate recovered oil for recycling. General non-hazardous wastes are delivered via tanker truck or oily waste by pipeline to the ORP, Tank LET T-4A. Wastewater from sumps, the initial storm water flow, and from rag laundering is also pumped to the ORP for treatment. Wastewater generated from the ORP can also be pumped to the IWTP-4B or tanks 1A and 1B for further treatment, if necessary.

#### 4. WASTE ACCEPTANCE CRITERIA

Waste will be accepted at NBCNI IWOW facility based on the waste criteria defined in this section. If the waste meets the criteria, the waste will be accepted at NBCNI IWOW following the procedures described in Section 5. For waste transported by pipeline to the ORP, waste profiles have already been established by the generator. The pipelines contain non-hazardous oily wastewater with all other constituents below the acceptable concentrations based on these established profiles. Once per calendar year, NBCNI IWOW staff will take samples and analyze the oily waste to confirm that the characteristics in the pipeline are similar to the analytical data provided in the most recent profiles. For tanker trucks, bowsers or containerized waste to be accepted at NBCNI IWOW the waste must have the criteria of an established profile on file, be accompanied by generator documented process knowledge (e.g. MSDS), or analytical data to determine waste acceptability. All required waste characterization documents must be submitted with the Waste Acceptance Form (WAF), **Enclosure 7**. Refer to **Enclosure 2** for a list of acceptable profiles. If a profile does not exist, the waste must be analyzed by an Environmental Laboratory Accreditation Program (ELAP) certified lab prior to arriving at NBCNI IWOW in accordance with the Waste Analysis Plan, **Reference (h)** and must meet the analytical criteria contained in this SOP. Analytical testing and parameters can be found in **Enclosure 8**. All IWTP and ORP wastes received by tanker truck will be visually inspected and a sample from each bower (upon availability) will be field-tested to confirm proper waste characterization.

The following specific wastes can be treated at the NBCNI IWTP:

##### General Industrial Waste

Waste meeting all conditions listed below may be managed as General Industrial Waste (GIW):

- Below all State and Federal HW limits;
- Amenable cyanide concentration is less than 0.32 mg/L;
- GIW does not contain chelating agents, such as ethylene diamene tetraacetic acid (EDTA) and citric acid.

##### Chrome Batch Waste

Waste meeting all conditions listed below may be managed as Chrome Batch Waste:

- Waste contains chromium and/or hexavalent chromium concentrations in excess of 25 mg/L;
- Waste does not contain any chelating agents, oil or detergent.

##### Mixed Metals Batch Waste

Waste meeting conditions listed below may be managed as Mixed Metals Batch Waste:

- Waste contains metals in excess of Industrial User Discharge Permit concentrations, **reference (i)**;
- In addition to the mixed metals, general organic wastes and cyanide may be periodically treated.

#### Cyanide Batch Waste

Waste meeting the conditions listed below should be managed as Cyanide Batch Waste:

- Waste containing amenable cyanides and does not contain phenol contaminated waste.

Waste that can be treated at the NBCNI ORP include oily wastewater mainly consisting of sea water containing low concentrations of diesel fuel, waste oil/fuel, lubricating oils, synthetic oil less than 100 gallons per waste acceptance, and heavy metals.

Refer to **Enclosures 3** and **4** for the characteristics of the types of waste that can be accepted at the IWTP and ORP.

## 5. PROCEDURE

### 5.1 General

- a) This procedure describes the process by which hazardous and non-hazardous wastes are accepted for treatment at the NBCNI IWOW. All plant operators are required to follow the procedures listed herein.
- b) On-site waste will be received from FRC facilities, from off-site generators whose waste may be hazardous or otherwise unacceptable for direct input to the ORP through the pipeline, or from wash racks and storm sewers at NBCNI.
- c) Off-site waste will only be treated at the NBCNI IWTP / ORP.
- d) Improperly characterized waste without discrepancy resolution or wastes identified as unacceptable will typically be returned to the generator based on a decision by the Plant Chemist/Operations Officer, IWOW Manager or Lead Operator.

### 5.2 From FRC Generators

- a) All trucks or bowzers received at the NBCNI IWOW are to follow the traffic plan indicated on **Enclosure 1**. The Operator is to direct vehicles to stop and park on the northeast side of Building 788 until directions are given to the driver. The drivers will be required to sign in at Building 788.
- b) All waste shipments received for treatment must be accompanied by the Waste Acceptance Form (WAF), **Reference (b)**. For hazardous waste accepted, the WAF must either refer to established profiles that are on file or must have an analytical data attached. Refer to **Enclosure 2** for a list of waste profiles accepted at the IWTP or ORP. The top portion of each waste acceptance form must be completed by the customer and should be completed prior to arrival at the NBCNI IWOW. Instructions for the customer's portion of the form are included on the back of the respective forms.
- c) Note the time written on the WAF and the time of arrival at the NBCNI IWOW. If the time difference is greater than two hours, contact the Plant Chemist/Operations Officer, facility Supervisor, or the Lead Operator for guidance. If the time difference is two hours or less, continue with this procedure.

- e) Using the waste characterization information provided on the waste profile and the WAF, makes a determination of whether the waste should be treated at the IWTP or ORP. Review **Enclosure 2** to determine if the waste described on the WAF can be accepted for treatment. The operator will refer to the waste profile numbers to determine if it is an acceptable waste that already has an existing profile. If the waste meets the criteria, proceed with **f**); if the waste is unacceptable for treatment, do not accept the waste and consult with the Plant Chemist/Operations Officer or Lead Operator for further guidance.
- f) When required, waste bulk shipments are sampled and field tested according to **Enclosure 2**. The Operator must obtain a sample of the waste, using appropriate personal protective equipment, and be present at the truck or bowser at the time of sampling. A Coliwasa type sampler or bailer is used as sample collection equipment. Perform a visual examination of the sample. If the waste appears to be consistent with the WAF written description, take the sample and the WAF into the Building 788 laboratory at NBCNI. Perform the field tests per requirements defined in **Enclosures 2** and **5**. Use the Hach® DR/2700 Spectrophotometer to determine the sample's contaminant(s) concentration. For specific testing procedures refer to the procedure manual and Hach method instructions for: chromium, hexavalent chromium, Total and Cyanide testing. If the waste is inconsistent with the written description, contact the Plant Chemist/Operations Officer or the Lead Operator for further guidance (or customer for re-characterization). When an over-range level of hexavalent chrome is obtained the operator performing the Total Chrome field test will take 1 mL from the test sample and add to a 25 mL test vial. They will dilute with 24 mL DI-water. Repeat steps with sample blank. Insert sample blank and zero the machine, then insert test sample and get reading. Once he has the value he multiplies it by 625. This will reveal the total chrome level. If the results are over-range notify the Plant Chemist/Operations Officer or Lead Operator for further instructions. For criteria determining when field tests are required for a given waste stream, refer to the FRC Profile List in the operator computer control room.
- g) If the results of the field tests are consistent with the information outlined on the WAF and waste profile sheet complete the operator section of the WAF. Use **Enclosure 2** to determine the category of waste, treatment process, and treatment tank.
- h) Assign a Bulk Profile Number on the WAF confirming that the waste is acceptable; this documents that the waste falls within the parameters and EPA and/or State Waste ID Codes for that profile. This information will be used for waste characterization verification (See SOP IWOW-067, **Reference (g)**) and billing.
- i) After completion of discharge, disconnect all hoses ensuring all measures are taken to prevent spillage. Direct the driver out of the facility in accordance with the traffic flow diagrams, **Enclosure 1**.

### 5.3 From Off-Site Generators

- a) All off-site hazardous waste shipments must be accompanied by a completed and signed WAF and a uniform hazardous waste manifest if the Generator Profile or analytical data indicates that the waste is hazardous.
- b) Confirm that the waste quantity listed on the WAF and manifest (if applicable) is consistent with the quantity of waste received at the facility. If there is greater than a 10% difference in weight, for bulk waste, or any variation in item count, for containerized waste, there is a significant discrepancy. In the event that this happens, note the discrepancy in block 19 of the manifest and contact the Operator or the Lead Operator for guidance. If there is not a significant discrepancy proceed. For confirmation and completion of manifests, refer to SOP IWOW-027, **Reference (a)**.

- c) POL- Petroleum, oils, lubricants and oily wastewater generators shipping oily waste to NBCNI IWOW are required to obtain authorization from NBCNI prior to transporting the material to ORP. Oily wastes are subject to halogenated organic compounds (HOCs or TOX) test via Chlor-D-Tect for POL and HydroCLOR-Q for oily wastewater once a day. Chlor-D-Tect and HydroCLOR-Q provide a screening tool to confirm that halogenated organic compounds are not present at levels that are inconsistent with the waste characterization **information** for acceptance at the ORP as an exempt recyclable oil that meets the purity standard. If the documentation is not provided or result from Chlor-d-Tect exceeds 3000PPM, contact the Plant Chemist/Operations Officer or the Lead Operator for guidance.
- d) Based on the determined waste type and treatment required, direct the driver to the appropriate waste facility unloading area see **Enclosure 1**. In accordance with the appropriate off-loading standard operating procedure, **References (a) through (d)**, respectively, ensure all valves are correctly aligned for discharging to the selected treatment tank. Connect the vehicle to the discharge point and ensure all transfer lines and appurtenances are compatible with the hazardous waste to be transferred. Labels, markings, color coding, or matching couplings should be used wherever there is a potential for accidental mixing of incompatible wastes. Start the pumping/discharging operation. If requested, the operator is to allow a clean-out of the vessel with the plant water system. The clean-out rinsate is to be discharged to the same tank as the waste was pumped. This rinsate water is to be included in the total volume on the WAF so the customer can be appropriately charged.
- e) After completion of discharge, disconnect all hoses ensuring all measures are taken to prevent spillage. Direct the driver out of the facility in accordance with the traffic flow diagrams, **Enclosure 1**.

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# Standard Operating Procedure IWOW-022

**TITLE: Waste Acceptance Form**

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**Reference:** (a) SOP IWOW-021 Waste Acceptance Procedure and Criteria: IWOW Facility  
(b) SOP IWOW-009 Overall Procedure for Batch Accumulation and Treatment

**Enclosures:** (1) Waste Acceptance Form (OTH-05)  
(2) Sample WAF – NBCNI (SF-10)  
(3) Sample WAF – NBSD (SF-11)  
(4) PPE Requirements for Specific Operations/Tasks (OTH-01)

---

## 1. PURPOSE

To establish procedures for use and management of the Waste Acceptance Form (WAF) at the Operator Industrial and Oily Waste (IWOW) Treatment Plant and Bilge and Oily Water Treatment Plants (BOWTS).

For operators not previously involved in this operation shall, at a minimum, review the PPE requirements in **OTH-01**.

## 2. ACTION

IWOW personnel

## 3. PROCEDURE

1. All waste shipments received for treatment at the IWOW and BOWTS facilities must be accompanied by the Waste Acceptance Form (WAF). The most recent version of the WAF is provided as **Enclosure 1**. Samples of WAF forms with required fields highlighted and completed are provided in **Enclosures 2** and **3**.

See **reference (a)** for detailed procedures for accepting waste.

2. When a waste has been deemed acceptable as detailed in **reference (a)**, the WAF shall be assigned a control number in the upper right-hand corner to establish a unique, sequential WAF delivery number. The operator is responsible for generating the Julian Date portion of the Bulk Control Number. This control number, assigned by the scheduler from the customer list, is indicated as the "bulk control number" on the form and is comprised of the following characters: the first four digits are the julian date, the second set of characters is a letter followed by 3 digits indicating an activity code, and the last set of characters is a sequential delivery number. The remaining fields in the upper portion of the WAF shall be completed by the waste generator (customer), in accordance with **Enclosure 1**

3. The WAF is to be completed and signed prior to discharging the waste into the appropriate tank. The lower portion of each WAF shall be completed by Operator-trained and approved staff for hazardous waste handling as follows:

**INTERNAL PROFILE CODE:** An internal waste profile code shall be indicated on the lower half of the WAF. This code is determined by cross-referencing supplied customer profiles and is used for type-of-service billing purposes and in periodic facility reports. The internal profile codes are as follows:

### Oily Waste/General Industrial Waste Profiles

NW21 – General Industrial Waste (GIW)

NW91 – AFFF

HW91 – Oil and Water and Contaminated AFFF

NW93 – Compensating Water & Rain Water

NW61 – Other Non Hazardous Waste

#### Industrial Waste Profiles

HW11 – Cyanide Waste

HW61 – Phenol and Organic Waste

HW51 – Chrome Waste

HW41 – Mixed Metal Waste

HW71 – Special Waste

HW31 – Acidic Only, less than or equal to 2 pH

HW21 – Caustic Only, greater than or equal to 12.5 pH

**TRUCK DOI:** If the waste being picked up is coming off a vessel and is being transferred over water, a truck DOI is required. The Plant Operator issuing the WAF should verify that the truck operator is in possession of a truck DOI. If the truck operator does not have one, the Plant Operator may furnish one as a courtesy.

**FACILITY:** Select/check appropriate treatment facility, IWTP, North Island ORP, or Naval Station, NAB, or NBPL BOWTS. Determine the appropriate facility after reviewing waste characterization information provided on the upper portion of the Waste Acceptance Form, and the Uniform Hazardous Waste Manifest, if applicable, and after conducting field tests.

**MANIFEST #:** Enter the Uniform Hazardous Waste Manifest number of the waste shipment. If there is no manifest, leave blank.

**TIME ARRIVED:** Time that the vehicle arrived at the facility.

**PHYSICAL STATE:** Enter the waste's physical state: solid, liquid or sludge.

**VOLUME (GALLONS):** Sum volume of the waste shipment and tank or container rinse water, if applicable.

**FIELD TEST RESULTS (MG/L):** Enter the results of any field tests in the blank space next to the appropriate Label. See below for field test associated with constituent/label.

| <u>Label</u> | <u>Constituent</u>   | <u>Test</u>     |
|--------------|----------------------|-----------------|
| Cr (VI)      | Hexavalent Chrome    | Hach Method 90  |
| Total Cr     | Total Chrome         | Hach Method     |
| CN           | Amenable Cyanide     | Hach Method 160 |
| CLOR-D-TECT  | Halogenated Organics | CLOR-D-TECT     |
| HYDROCLOR-Q  | Halogenated Organics | HYDROCLOR-Q     |
| Other        | other constituents   | varies          |

When performing "other" tests, write the field test name and results next to the "other" label.

**pH:** If testing waste for pH, enter the pH in this field. Otherwise leave blank.

**TREATMENT GROUP:** Select the appropriate waste treatment category defined in following table according to supplied generator knowledge of the waste, and confirmation results of required field testing.

| <u>Category</u>       | <u>Waste Stream</u>   |
|-----------------------|---|
| 1-OW                  | wastes sent to ORP  |
| 2-CONTAMINATED OW/GIW | wastes sent to IWTP*  |
| 3-CHROME              | waste containing chrome and no other metals                   |
| 4-MIXED METALS        | waste containing metals (may include chrome)                  |
| 5-CYANIDE             | waste containing cyanide                                      |
| 6-PHENOL              | waste containing organics                                     |
| 7-SPECIAL             | other waste streams, contact supervisor before selecting this |

\*Includes oily waste with metals concentrations above limits for the oily waste treatment plant and General Industrial Waste (waste that may be treated in IWTP Load Equalization Tank)

**TRACKING NUMBER:** The WAF tracking number is comprised of the two digit acceptance year, zone (1 through 4, corresponding to facility accepting waste), two digit acceptance month, and the sequential WAF number.

**WASTE TREATMENT TANK NUMBERS:** For IW/GIW, select and indicate treatment tank identified to accept waste according to designated use of tank as specified in **reference (b)**. For OW, list which tank is currently designated to accept waste.

|         |         |
|---------|---------|
| Tank 1A | Tank 1B |
| Tank 4A | Tank 4B |
| Tank 5A | Tank 5B |
| Tank 6A | Tank 6B |

**BATCH NUMBER:** This applies to IWTP batch treated wastes. Enter current batch number for the respective treatment tank in the field. The batch number and designation of the treatment tank is assigned and tracked in accordance with reference (b).

**OPERATOR IWOW REPRESENTATIVE:** Print name, sign and date form.

**TIME WAF ISSUED:** Time that the WAF was issued to the driver.

4. The IWOW operator is to make two copies of the WAF. One copy is provided the customer, the second copy is placed in the appropriate batch tank accumulation folder. The original copy is turned in and entered into the EWBATS database for billing and tracking purposes.
5. Once the WAF is completed and signed, the IWOW operator shall follow the procedures in **reference (a)** for waste acceptance.
6. For the batch treatment tanks, the WAFs will be accumulated in the folders until the respective treatment tank is ready for treatment. The waste will be treated in accordance with the respective batch treatment standard operating procedure. The documentation of the treatment will be stapled to the corresponding WAFs and filed. After treatment, the IWOW operator will change the batch number for the treatment tank, in accordance with **reference (b)**.
7. For containerized waste, the Plant Chemist or designated person will write OK, their initials, the date inspected, profile #, and tank for disposal on the WAFs.

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## Standard Operating Procedure IWOW-023

**TITLE: Unloading Waste into the IWTP/ORP at NBCNI**

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**References:** (a) IWOW-021 Waste Acceptance Procedure and Criteria  
(b) IWOW-022 Waste Acceptance Form

**Enclosures:** (1) PPE Requirements for specific operations/tasks (OTH-01)  
(2) Waste Acceptance Form (OTH-05)

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### 1. PURPOSE

To provide procedures for unloading industrial wastes and oily wastes into the IWTP/ORP at NBCNI.

### 2. ACTION

IWOW Personnel

CSW Personnel

### 3. WASTE MATERIAL HANDLERS GENERAL

1. The IWOW Operator or Waste Material Handler will conduct waste acceptance, screening, discrepancies, and refusal in accordance with the standard operating procedures listed in **References (a)** and **(b)**. This procedure is to provide direction for an IWOW Operator or Waste Material Handler after completing the representative waste sample analysis and determining that the waste is acceptable. The procedures outlined below are the minimum guidelines applicable to all hazardous waste bulk transfer operations to ensure safe handling of waste, minimize waste acceptance error or equipment failure.
2. The minimum level of personal protective equipment required by both the IWOW Operator and Waste Material Handler includes an appropriate uniform, hardhat, safety glasses, and safety boots. Chemical protective clothing such as Tyvek® suits may be required depending on the waste being transferred.
3. All loading or unloading operations shall be continuously monitored and supervised throughout the entire process. IWOW Operators and Waste Material Handlers shall never leave this operation unattended, shall be properly trained, shall be aware of all potential problems and dangers (overfilling, leaks, vapor or liquid explosion, and fire), and shall remain alert at all times.
4. Keep personnel out of the vehicle during loading/unloading operations. Do not leave the vehicle unattended at any time during the entire operation. Maintain communication between pumping and receiving operations at all times.
5. Ensure all transfer lines and appurtenances are compatible with the hazardous waste to be transferred. Labels, markings, color coding, or matching couplings should be used wherever there is a potential for accidental mixing of incompatible wastes.

6. Keep a time log of receiving tank soundings, to ensure that all of the waste being pumped is reaching the tank and is not leaking at other points throughout the pumping circuit.
7. Never completely fill the receiving tank when loading volatile, flammable, or combustible hazardous wastes. Provide a minimum of 1% outage to prevent leakage due to thermal expansion.
8. For operators not previously involved waste unloading operations they shall, at a minimum, review the PPE requirements in **(OTH-01)**.

#### **4. PROCEDURE**

##### **4.1 Prior to Commencing Waste Unloading Operations**

1. Direct the Waste Material Handler to park vehicle in approved unloading locations only (i.e., spill contained bermed area). Ensure the driver sets the parking brakes on bowser or tanker truck and the vehicle is secured with physical barriers such as wheel chocks, tug brakes engaged, truck parking brakes engaged, to safeguard against accidental movement and rupture of transfer lines and hoses.

If transferring flammable or combustible liquids, establish bonding/grounding before the loading pipe or hoses are connected.

2. The Waste Material Handler shall closely examine the lowermost drain and all outlets of vehicle for leakage or defects, while also checking that all vehicle and transfer lines are located entirely within the containment area.
3. The IWOW Operator shall determine the type and amount of the wastewater to be pumped into the facility by reviewing the Waste Acceptance Form **(OTH-05)**. If desired, the IWOW Operator shall confirm any analytical testing or physical level sounding notations. In addition, refer to SOP IWOW-021 for required field sample collection prior to waste transfer.
4. The IWOW Operator shall check the existing volume in the receiving tank and verify that sufficient volume remains to receive the incoming waste. This check shall include a visual check of all plant storage tank flanges, joints, connections, outlets, transfer hoses for evidence of deterioration or leakage, as well as checking the valve alignment to ensure that the unloaded waste will be pumped to the correct treatment tank.
5. When waste is deemed acceptable, the IWOW Operator or Waste Material Handler will then connect the discharge hose from the bowser or tanker truck to the selected off-loading pump, and ensure that camloc levers are secured with locking devices after the connection is made to the pump.
6. Keep hose ends tightly capped while moving them into position.
7. Utilize a drip pan placed beneath truck/bowser hose connection to minimize spillage.

##### **4.2 During Unloading Operations**

1. Prior to initiating waste transfer, ensure that all appropriate valves are aligned correctly.
2. Select air diaphragm or electrical pump and initiate pump operation. If operating air diaphragm pump, turn on air slowly and do not exceed 60 psi.
3. To minimize the potential for fire or explosion when transferring Class 1 (flammable) liquids, shut off motors of tank vehicle and motors of auxiliary or portable pumps when making and

breaking hose connections. If the operation does not require the use of the tanker truck motor, keep the motor shut off throughout the transfer operation.

4. While the Waste Material Handler continuously monitors all hose couplings, the IWOW Operator shall monitor the liquid level in the receiving tank prior to unloading to prevent overflow and other potential spills by verifying the capacity in the receiving tank to accept the full load based on the level readings from the SCADA system. The IWOW Operator shall ensure the flow rate is reduced while topping off the tank to provide sufficient reaction time for pump shutdown without overflow of the receiving tank.
5. After completion of waste transfer through the Industrial Waste off-loading area, fill an 85-gallon overpack with water to flush the line used to transfer the waste material to the particular storage tank. Flush lines 2 to 3 times to ensure waste has been evacuated from line.

#### 4.3 Upon Completion of Unloading Operations

1. The IWOW Operator shall secure the air to the pump or de-energize electric pump.
2. Close and secure all appropriate valves to the receiving tank, all internal, external, and dome-cover valves in the vehicle, and make sure the transfer operation is complete before disconnecting any transfer lines. Use a drip container when breaking a connection.
3. Secure all tanker and bowser hatches and inspect all outlets for evidence of leakage prior to vehicle departure.
4. Make sure all hoses and other connecting devices are drained, vented, blown down, or blown out to remove any remaining chemicals before moving them away from their connections.
5. Cap hose ends before moving them, to prevent uncontrolled leakage.

#### 4.4 CSW Consolidation/Unloading Operations

1. Industrial Waste Liquids
  - a. Ensure there is an approved WAF for each waste container to be managed.
  - b. Arrange to have the containers staged in appropriate offload area.
  - c. Ensure all personnel are in the PPE prescribed by **OTH-01**.
  - d. No consolidation/unloading activity will start until personnel from CSW and IWOW are in place and have reviewed the AHA.
  - e. If an overpack is being used to consolidate small containers:
    - i. Ensure it has been emptied.
    - ii. Add approximately 10 gallons of water.
    - iii. Engage the mixer.
  - f. Consolidate like waste into the overpack until finished or it is 80% full.
  - g. If the waste being consolidated is not unused product of the same brand and product description, conduct a bucket compatibility test of each container before adding to the overpack. See CSW SOP **HW-05-032**, section 7.1.5.

- h. CSW Personnel will alert the IWOW Operator when the waste in the overpack or next drum can be pumped into the IWTP.
  - i. Rinse the lines by filling the overpack with water and pumping into the IWTP in between waste types.
  - j. The containers are rinsed before operations are completed and the rinse water is pumped into the IWTP. CSW Personnel will move empty containers.
  - k. CSW Personnel will clean the strainer and spray down the staging area at the end of the pumping activity.
  - l. Ensure the overpack is rinsed and emptied prior to leaving the area.
2. Oily Waste Liquids
- a. Ensure there is an approved WAF for each waste container to be managed.
  - b. Arrange to have the containers staged.
  - c. Ensure all personnel are in the PPE prescribed by **OTH-01**.
  - d. No pumping activity will start until personnel from CSW and IWOW are in place and have reviewed the AHA.
  - e. Pumping is done with both mutual agreement of CSW and IWOW personnel.
  - f. The containers are rinsed upon completion of pumping operations and the rinse water is pumped into the ORP. The CSW Personnel will move empty containers.
  - g. CSW Personnel shall clean the strainer and spray down the staging area at the end of the pumping activity.
3. IWTP Solids Consolidation
- a. Ensure there is an approved WAF for each waste container to be managed.
  - b. Determine if the wind is sufficiently low so dusty waste streams will not leave the consolidation area. Ask the Safety Manager if there is doubt.
  - c. Arrange to have the containers staged.
  - d. Ensure all personnel are in the PPE prescribed by **OTH-01**.
  - e. No consolidation/pumping activity will start until personnel from CSW and IWOW are in place and have reviewed the AHA.
  - f. Cordon off the area immediately surrounding the consolidation area to ensure unprotected personnel do not come in contact with the waste being consolidated.
  - g. Prepare the overpack for mixing the solids with water:
    - i. Ensure it has been emptied.
    - ii. Add approximately 10 gallons of water.
    - iii. Engage the mixer.
  - h. Add water as necessary during the consolidation process.

- i. Consolidate like waste into the overpack until finished or it is 80% full.
- j. If more than one type of waste is being consolidated, completely empty the overpack, rinse the lines and prepare the overpack for the next type of waste per item (g.) above.
- k. The containers are rinsed before operations are completed and the rinse water is pumped into the IWTP. The CSW Personnel will move empty containers.
- l. Spray down the area to remove particulates which have adhered to equipment and structures during the consolidation process as necessary.

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# Standard Operating Procedure IWOW-025

**TITLE: Operational Guideline and Procedures for NBPL Oily Waste Filter Press**

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**References:** (a) Preventative Maintenance Schedule  
(b) CCR Title 22 66265.173(a)

**Enclosures:** (1) NBPL Daily Plant Start-Up/Shutdown Checklist (CL-01)  
(2) Sludge Filter Press Operation Checklist (CL-13)  
(3) PPE Requirements for Specific Operations/Tasks (OTH-01)

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**1. PURPOSE:**

To provide operating procedures for filter press.

For operators not previously involved in this operation they shall, at a minimum, review the PPE requirements on **OTH-01**.

**2. ACTION:**

This procedure applies to IWOW Operators

**3. OPERATING PROCEDURES**

**3.1 Start-up Sequence**

- A) Pre-coat the filter Press IAW CL-13 prior to placing the filter press online.
- B) Turn on the Air compressor. Open the Air Compressor outlet valve SP7.
- C) Open the Scum Tank outlet valve SP11
- D) Turn on the Air compressor. Open the Air Compressor outlet valve SP7.
- E) Open the following valve on the filter Press prior to starting: SP1, SP2, SP3, SP4, SP5, SP8. See enclosure (CL-43)
- F) Close the following valves SP6, SP9
- G) Open SP10, this will allow the air operated diaphragm pump to operate pumping sludge from the scum tank to the filter press. (This valve is also used for throttling and maintaining pump operation)
- H) Using the Hydraulic pump maintain 4000 – 5000 psi pressure on the filter press plates.
  - I) Process Sludge until one or more of the following occur: (1) If there is 10 or more seconds between diaphragm pump cycles 2). Sludge in the sludge tank is no longer going down

**3.2 Blow Down Procedures**

- A) Blow down in accordance with enclosure (b) CL-13

**3.3 Shut down Sequence**

- A) Secure pumping sludge to the Filter Press by closing SP10

B) Close the following valves: SP7, SP11

C) Turn OFF the air compressor.

D) Secure the Filter Press IAW CL-2.2 and CL-13

### **3.4 Dumping the Press (Cake) Into the Drum Under the Press**

A) The drum under the OW filter press shall be closed and secured at all times unless the operator is loading the drum. Per Title 22 all hazardous waste containers shall be closed during transfer and storage.

B) Release clamp pressure at the hydraulic ram.

D) Separate individual plates by hand and clean off filter cloth of OW filter press cake into the drum under the press.

E) Clean the area when finished

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## Standard Operating Procedure IWOW-027

### TITLE: Procedures for Management of Uniform Hazardous Waste Manifests

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**Reference:** (a) Summary of Sampling Performed by Service Provider IWOW Personnel, SOP IWOW-028  
(b) Waste Acceptance Procedure and Criteria: Industrial Waste, SOP IWOW-021  
(c) California Code of Regulations, Title 22, Division 4.5, Chapter 14, Article 5  
(d) Industrial and Oily Waste Sludge Disposal Procedures, SOP IWOW-017  
(e) Recovered Oil/Fuel Oil Disposition as Exempt Used Oil, Fuel Oil Recovered (FOR), or Waste Oil, SOP IWOW-045

**Enclosure:** (1) Uniform Hazardous Waste Manifest (OTH-96)  
  
(3) Waste Acceptance Form (OTH-05)  
(4) Land Disposal Restrictions (SF-15)  
(5) EPA ID List (OTH-105)  
(6) Manifest Correction Letter (OTH-106)

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#### 1. PURPOSE

Establish procedures for managing uniform hazardous waste manifests (UHW) in accordance with the RCRA permit requirements.

#### 2. ACTION

IWOW Personnel

#### 3. PROCEDURE

##### A. Background

A uniform hazardous waste manifest (UHW) is comprised of six pages (**Enclosure 1**). The NBCBI Oil Recovery Plant (ORP) and the Industrial Waste Treatment Plant (IWTP) receive UHWs when accepting waste from off-site generators and generate UHWs when shipping treated sludge residuals. Only employees who are in the manifest signing log are authorized to sign manifests on behalf of the Navy, Commander Navy Region Southwest. Prior to signing a manifest, the employee will confirm that they are authorized. Navy personnel/activity are not authorized to sign manifests.

At no time shall hazardous waste be received under UHW at the NAB, NBSD and NBPL BOWTS, as these facilities are not permitted to receive such wastes.

The proper distribution and management of these pages in accordance with **Reference (c)** is an important element of the hazardous waste disposal facility permit. The six pages of the UHW (**Enclosure 1**) can be identified by red-lettered directions on the bottom of each page:

- Page 1: "Designated Facility to Destination State (if Required): The accepting TSDF sends this copy to DTSC, P.O. Box 3000, Sacramento, CA 95812, within 30 days.

- Page 2: "Designated Facility to Generator State (if Required)": The accepting TSDF sends this copy to the Generator's State, in CA DTSC, P.O. Box 3000, Sacramento, CA 95812, within 30 days.
- Page 3: "Designated Facility to Generator Copy": Upon receipt of the waste, the TSDF will send this copy to the generator listed in box 5 of the UHWM, within 30 days. If the Navy is the generator, this copy is maintained in the NBCNI Building 1606 files.
- Page 4: "Designated Facility Copy": This copy is kept by the TSDF whose activity appears in box 8 of the UHWM. If the Navy is the TSDF, this copy is maintained in the NBCNI IWOW Plant Operations Office files, Building 788.
- Page 5: "Transporter Copy": This copy is retained by the transporter.
- Page 6: Generator's Initial Copy: This copy is retained by the Generator. If the Navy is the Generator, this copy is maintained in the NBCNI IWOW Building 1606 files.
- Generators must make a legible copy of the manifest to submit to DTSC, P.O. Box 400 Sacramento, CA 95812-0400. The uniform manifest will no longer have a designated copy specified for generators to submit to DTSC.

#### B. Filling Out the UHWM

To be filled out by the generator:

Item 1: Generator ID Number: Generators and TSDF employees will confirm that the proper ID Number was used, using the EPA ID Number List (**Enclosure 5**).

Item 2: Page 1 of \_\_\_\_: Enter the total number of pages used to complete the manifest plus the number of continuation sheets

Item 3: Emergency Response Number: This must be a 24 hour number

Item 4: Manifesting Tracking Number: This will be preprinted on each manifest by the forms printer

Item 5: Generator's Name and Mailing Address: If the Navy is the generator the name and address should always be Commander Navy Region Southwest, P.O. Box 181470, Coronado, CA 92178-1470

Generator's Site Address (if different than mailing address): This address should specify the base and building number the waste was generated at

Item 6: Transporter 1 Company Name and U.S. EPA ID Number: Vehicle and/or driver information may not be entered here,

Item 7: Transporter 2 Company Name and U.S. EPA ID Number: Vehicle and/or driver information may not be entered here,

Item 8: Designated Facility Name and Site Address, US EPA ID Number, and facility phone number

Item 9a HM: If the waste in Item 9b is a hazardous material enter an "X" in this item next to the corresponding hazardous material identified in Item 9b.

Item 9b: U.S. DOT Description (including ID Number, Proper Shipping Name, Hazardous Class, and Packing Group (if any): Use 49 CFR 172 and Title 22 for reference

Item 10: Container No. and Type: Enter the number of containers for each waste and the appropriate abbreviation from Table I below for the type of container

Table 1 Types of containers

|   |                                 |
|---|---------------------------------|
| BA= Burlap, cloth, paper, or plastic bags             | DT= Dump truck                  |
| CF= Fiber or plastic boxes, cartons, cases            | DW= Wooden drums, barrels, kegs |
| CM= Metal boxes, cartons, cases (including roll-offs) | HG= Hopper or gondola cars      |
| CW=Wooden boxes, cartons, cases                       | TC= Tank cars                   |
| CY=Cylinders  | TP= Portable tanks              |
| DF=Fiberboard or plastic drums, barrels, kegs         | TT= Cargo tanks (tanker trucks) |
| DM= Metal drums, barrels, kegs                        |                                 |

Item 11: Total Quantity: Round partial units to the nearest whole unit, do not enter decimals or fractions. Waste quantities entered should be based on actual measurements or reasonably accurate estimates of actual quantities shipped. Container capacities are not acceptable as estimates.

Item 12: Units of Measure (Weight/Volume) Enter the appropriate abbreviation from Table II below for the unit of measure.

Table II – Units of Measure

|                                 |                        |
|---------------------------------|------------------------|
| G= Gallons (liquid only)        | N= Cubic Meters        |
| K= Kilograms                    | P= Pounds              |
| L=Liters (liquids only)         | T= Tons (2,000 pounds) |
| M= Metric Ton (1,000 kilograms) | Y= Cubic Yards         |

Item 13: Waste Codes: Enter up to 6 federal and state codes to describe each waste stream identified in Item 9b.

Item 14: Special Handling Instructions and Additional Information: Generators may enter any special handling or shipment specific information necessary for the proper management and tracking of the materials under the generator's or their handler's business processes, such as profiles, container codes, or response guide numbers, or additional descriptive information about the shipped material, (i.e., % HM and % water, or other material). This space may also be used to record any alternate facility designations, manifest tracking number of the original manifest for rejected wastes and residues that are re-shipped under a second manifest.

Item 15: Generator's/Offeror's Certifications: Hand write in name, sign and date.

Item 16: International Shipments: Leave blank, not applicable to the this project

To be filled out by transporter

Item 17: Transporters Acknowledgements of Receipt: Hand writes in name, sign and date.

Item 18: Discrepancy: Used to assist in the return or further shipments of rejected loads without the burden of re-manifesting

Item 18a: Discrepancy Indication Space: Check corresponding box

Item 18b: Alternate Facility (or Generator) for Receipt of Full Load Rejections: Write in the alternate facility or the generators name that corresponds to where the waste will be sent next

Item 18c: Alternate Facility (or Generator) Signature): Signature of facility receiving the previously rejected load

To be completed by receiving facility

Item 19: Hazardous Waste Report Management Method Codes: Enter H135 for waste received into the IWOW. If waste goes to another facility they will select the code.

Item 20: Enter the name of the person receiving the waste on behalf of the Navy, sign and date.

#### C. Waste Received By UHWM.

Waste generator shall provide receiving facility with a UHWM for intended waste disposition. The UHWM for waste arriving at the IWOW facility will have 5 or 6 pages, out of 6 total, depending on whether the EPA Identification Number is managed by a contractor or by the Navy .

The following is a general description of the management of UHWMs by IWOW personnel for waste received at the IWOW facility by UHWM:

1. Upon receipt of the waste at the IWOW facility, the IWOW Operator will inspect and ensure the accuracy of wastes received. The IWOW Operator is responsible for verifying the information existing on the manifest is 1) complete 2) legible 3) accurate. **References (a) and (b)** provide guidance on performing field sample collection and testing to verify waste profile accuracy, and to determine waste acceptance. Discrepancies are resolved upon discovery, as discussed in Section D.
2. If the receiving load is acceptable, the IWOW Operator will assign Management Method Code 135, in box 19, sign and date the manifest in block 20.
3. The IWOW Operator will also provide the transporter with the Transporter Copy (page 5) of the UHWM, and record the UHWM number on the Waste Acceptance Form (WAF) (**Enclosure 3**) and in the operator's log.
4. The IWOW Operator removes the Designated Facility copy (page 4) of the UHWM and any other supporting documentation, such as MSDS(**Enclosure 4**) and WAFs, and retains in the applicable batch folder.
5. The remaining pages of the UHWM are provided to the IWOW Environmental Protection Specialist (EPS) or NBCBI designee upon acceptance of the waste for reveiw.
6. Upon receipt, the UHWM copies are reviewed by the QC Team and entered into the EWBATS tracking database.

7. The manifest coordinator is responsible for the distribution or retention of the balance of UHWM copies. The manifest coordinator shall transmit the appropriate copy to the DTSC and to the generator, if applicable, within the allotted 30-day period. Retained copies are filed in the NBCBI Building 1606 files.
8. Upon request, copies of manifests shall be made readily available using fax, electronic means, hand-delivery, or hard-copy.

D. Discrepancies

The Service Provider IWOW personnel processing the UHWM shall note significant discrepancies between information on the UHWM and the waste shipment, under Item 18 of the UHWM.

1. Manifest discrepancies are differences between the quantity or type of HW designated on the manifest and the quantity or type of HW a facility actually receives.
2. Significant discrepancies are variations in quantity greater than 10 percent in weight for bulk waste and any variation in piece count, such as a discrepancy of one drum in a truckload for batch waste. Significant discrepancies are reported to Service Provider EPS.
3. Significant discrepancies in waste type are obvious differences that can be discovered by inspection or waste analysis, such as solvent substituted for acid or toxic constituents not reported on the manifest.
4. In addition to significant discrepancies, other discrepancies (such as improper EPA ID number, missing signatures, incorrect dates, etc.) that appear on a manifest will be addressed through a discrepancy letter, as necessary and/or required.
5. Upon discovery of a discrepancy, an attempt shall be made to reconcile the discrepancy by telephone conversation with the generator, transporter, or TSDf, as applicable. If the discrepancy can not be resolved and all copies of the manifest corrected before copies have been mailed to DTSC, a discrepancy letter shall be sent to DTSC describing the discrepancy and attempts to reconcile it (with a copy of the manifest at issue) after notification and review by the NAVFAC SW RO and CNRSW Environmental, using a previously approved format (**Enclosure 6**). Copies of correction letters shall be kept on file in the Service Provider File Room in Building 1606 with the corrected manifest.
6. Upon discovering a discrepancy involving a hazardous waste of concern, as defined in Title 22, Section 66261.111(a), and the waste at issue represents a reportable quantity or a reportable difference in type, as specified in Section 66261.111(b) and (c), Service Provider shall attempt to reconcile the issue with the generator or transporter. If the issue is not reconciled within 24 hours after discovered, then Service Provider shall immediately notify NAVFAC SWRO, CNRSW Environmental, and provided the following information:
  - i. Facility name and EPA ID number
  - ii. Generator name and EPA ID number
  - iii. Transporter name, EPA ID number and registration number
  - iv. Manifest number, information from line 11, 12, 13, and 14 of the manifest (including proper shipping name, hazard class, identification number, packing group, number of containers, container type, quantity or volume at issue, weight or volume units, and waste codes)
  - v. Potential location or transportation routes where the hazardous waste of concern may have become missing.

If the issue has not been resolved after being discovered and copies have been mailed to DTSC, EPS or designee shall generate a written report to DTSC describing the issue and the attempts to reconcile, and shall include a copy of the manifest using a previously approved format (**Enclosure 6**). This letter will be submitted to the Navy and the Navy will send it to DTSC

7. The NAVFAC SW RO and/or CNRSW Environmental must review all draft agency correspondence prior to sending to the agencies, and an email will be sent containing the letter to the NAVFAC SW RO and CNRSW Environmental for review and submittal to DTSC.
8. Residues can also be resolved in the discrepancy section (item 18). If a container is not "empty," then it is a container residue and must be managed as a hazardous waste. In order to dispose of container residue, the TSDf must prepare a new manifest and ship the container back to the generator or to an alternate facility. The TSDf will then check the "Container Residue" box, item 18a and 18b on the original manifest, and enter the original manifest number on the new manifest in item 14.
9. Rejected loads can also be described in the discrepancy section of the manifest (item 18).
  - A. If the transporter has not left and the full load is rejected, the operators will continue to use the original manifest and complete alternate facility information in item 18b, with either the generator's information or, at the generator's request, the name of the alternate facility. If the transporter has left, then the TSDf must prepare a new manifest.
  - B. If a partial load is rejected by the TSDf, then the TSDf must prepare a new manifest and write the old manifest number in item 14 of the new manifest. At the generator's request, prepare the new manifest with an alternate facility identified by the generator, showing the generator as generator, or return the waste to the generator showing the TSDf as the offeror.

#### E. Unmanifested Waste

If unmanifested waste arrives at the IWOW, Service Provider will contact the generator and have a manifest sent directly. Waste will not be received into the IWOW without a required manifest.

#### F. Wastes Shipped Off Site by UHWM.

Recovered oil is manifested to NBC-NI from the NAB and NBPL BOWTS, or is manifested for off-site disposal if it does not meet purity standards from any of the Service Provider treatment plants. Waste manifesting for off-site disposal occurs when one roll-off container of treatment residual sludge is 90 percent full, or 2 weeks before the last day of the storage period (NBSD 90 days and NBCBI 365 days from the accumulation start date). Refer to SOP IWOW-045 and IWOW-017 for specific procedures on recovered oil and waste sludge disposition, respectively. The following is a general description of the waste manifesting process and identifies personnel responsibilities associated with this task.

1. IWOW personnel shall prepare the 1348-1A form (**Enclosure 2**) in the EWBATS system and request approval from the RO. To request approval, the EPS or designee will email the NAVFAC SW RO indicating the DTID number.
2. Once the NAVFAC SW RO has approved the form, the EPS or designee will print and sign the 1348, scan and send to DLA representative. to the Defense Logistics Agency

representative requesting waste disposition authorization. The DLA will then prepare a Delivery Order and schedule a pickup.

3. The DLA and the off-site disposal contractor shall arrive at the facility with the UHWM, LDRs, and corresponding waste profiles.
4. The off-site disposal contractor shall inspect the material container and, if acceptable, load for transportation. The attending IWOW representative shall review the UHWM and, if acceptable, sign the generator block (Item 20), retain the generator copy, and make a copy to send to DTSC.
5. The IWOW representative shall provide the generator retained copy as well as the DTSC copy to the EPS or designee. Upon receipt, the UHWM copies are reviewed by the Service Provider QC Team and any errors are attempted to be corrected. After the review and corrections have been completed, the manifests are entered into the EWBATS tracking database. The Manifest manager shall distribute the appropriate copy to the DTSC within the allotted 30-day period. Retained copies are filed in the NBCBI Building 1606 files. In addition, the EPS or designee shall ensure receipt of the TSDF-signed copy. If that copy is not received within 35 days, then the EPS or designee shall contact the transporter and/or the owner or operator of the designated facility to determine the status of the hazardous waste. If a copy of the manifest with a handwritten signature of the owner or operator of the designated facility is not received within 45 days, then the EPS or designee shall prepare an exception report and provide it to the Region Hazardous Waste Program office for transmittal to DTSC.

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# Standard Operating Procedure IWOW-028

**TITLE:** Summary of Sampling Performed by IWOW Personnel

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**References:** None.

**Enclosures:** (1) IWOW Analytical Sampling Frequency Table (OTH-59)  
(2) Waste Sampling and Test Parameters/Methods (OTH-60)

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## 1. PURPOSE

Outline the frequency, responsibility, and nature of analytical sampling requirements to comply with the regulations for IWOW operations at NBCNI.

## 2. ACTION

IWOW Personnel.

## 3. PROCEDURE

1. The IWOW Analytical Sampling Frequency Table, **Enclosure 1**, summarizes the routine analytical sampling of contaminated waste deliveries, batch treatment, and plant effluent monitoring required for regulatory compliance. Samples shall be collected by trained IWOW personnel. This table defines the frequency of analytical requirement and documentation (reference forms) used to achieve a task.
2. Depending on the analysis required per **Enclosure 1**, the specific waste analysis and sampling procedures are defined according to **Enclosure 2**.
3. Whenever there are significant changes in analytical sampling frequency requirements, documentation, or tasking responsibility, the summary table for this standard operating procedure is to be updated within one month of a change. Prior revisions of this document are to be retained in the IWOW facility files for future reference.

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## Standard Operating Procedures – IWOW-035

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### TITLE: Progressive Cavity Pumps- Preventative Maintenance and Spares Schedule

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**References:** (1) Netzsch Incorporated, Nemo pump Division, Model NE50, 60, 80A/2NE80, 100A, O&M Manuel which includes Reeves Varispeed/Moto Drive Instruction Manuel:

|            |                         |
|------------|-------------------------|
| P-32 A/B   | Oil Water DAF Pumps     |
| P-33 A/B   | Sludge/Scum Oil Pumps   |
| P-31 A/B   | Oily Waste Pumps        |
| P-35 A/B   | Truck Transfer Pumps    |
| P-1351 A/B | Lift Station 1351 Pumps |
| P-1352 A/B | Lift Station 1352 Pumps |

(2) Tarby Progressing Cavity Pumps Service Manual  
P-94 IWTP Sludge Pump

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### 1. PURPOSE

Establish schedule of preventative maintenance and spare parts inventory for progressive cavity pumps at the new IWTP/OWTP and 1351 and 1352 lift stations.

### 2. ACTION

Code 932 IWTP Operators

### 3. PROCEDURE

#### A. Lubrication Schedule

##### Netzsch Nemo & Tarby Pumps

Bearings – remove, clean, repack bearings with new grease every 8000 hours or two years.

Netzsch synthetic gear joint oil or Shell, Omala 460 (Netzsch Pumps)

Gear Type Universal Joints- replace seals and joint oil every 8000 hours or two years

Lithium saponified grease (Netzsch Pumps)

(i.e. ARAL Grease HL2, ESSO Beacon 2, Shell Alvania 2, BP Energrease LS2)

Reeves Varispeed Drives- lubricate every 40-60 hours with grease gun at 2 or 3 points

Neutral Mineral Grease equivalent to Number 1 NLGI (Reeves Varispeed Drives)

(i.e. Mobiltemp No. 1, Texaco Novetex No. 1, American Amolith No. 1, Shell Avania No. 1)

Reeves Vaispeed Drives Gear Reducers-change gear oil every 750 hours

(i.e. Amoco 460 Worm Gear oil, Arco Mineral Gear Oil 140, Texaco Vangard 460)

B. Spare Parts

Here is a summary of the suggested parts that should be kept in. Please note that there are only a handful of common spare parts for the Netzsch progressive cavity pumps at the new OWTP and the 1351/1352 lift stations.

Netzsch Nemo Pumps

P-31 A/B – Netzsch NE 60A Pump (Oily Waste Pumps)

| Quantity | Part Number | Description  |
|----------|-------------|--|
| 1        | 167201      | Stator NE60 SB                                       |
| 4        | 593673      | Stator o-ring (Ring flat 118/38*3 PERB)              |
| 2        | 516401      | Casting Seal (o-ring 125*4 NB70 D3770)               |
| 2        | 872180      | SM Gear Jnt Seal (Gear Seal NE60 NB60ST)             |
| 2        | 685745      | Gear Joint Complete NE60/70 ST/GG                    |
| 1        | 850710      | Rotor NE60 K 1.4561                                  |
| 4        | 516457      | o-ring 71*3 NB70 D3770                               |
| 10       | 508787      | Head Ringer Retainer Screw<br>(HD CAP M5*6 45H D914) |

P-32 A/B & P-33 A/B – Netzsch NE 50A Pump (DAF Pumps & Sludge Scum Pumps)

| Quantity | Part Number | Description  |
|----------|-------------|--|
| 0        | 167170      | Stator NE50 SB   |
| 2        | 590658      | Stator o-ring (Ring Flat 100/118*3 PERB)                   |
| 2        | 516623      | Casting seal (o-ring 108*4 NB70 D3770)                     |
| 4        | 872180      | SM Gear Joint Seal<br>(Gear Joint Seal NE50 SM NBR60-1356) |
| 2        | 687272      | Gear Joint Complete NE50 ST                                |
| 0        | 850566      | Rotor NE50A K 1.4571                                       |
| 2        | 516410      | o-ring 62*2 NB70 D3770                                     |
| 10       | 509203      | Head Ring Retainer Screw<br>(HD CAP M5*16 A2-SS D912)      |

P-35 A/B Netzsch NE 80A Pump (Truck Transfer Pumps)

Common parts #'s with P-1351 pumps in **bold**

| Quantity | Part Number   | Description                              |
|----------|---------------|--|
| 1        | 167292        | Stator NE80 SB                           |
| 2        | <b>591983</b> | Stator o ring (Ring Flat 155/174*3 PERB) |

|   |               |   |
|---|---------------|---|
| 1 | <b>516228</b> | Casting Seal (o-ring 155*4 NB70 D3770)                |
| 2 | <b>872656</b> | SM Gear Joint Seal<br>(Gear Joint Seal NE80Sm PERB)   |
| 1 | <b>685746</b> | Gear Joint Complete NE80 ST/GG                        |
| 1 | 867683        | Rotor NE80A K 1.4571                                  |
| 2 | <b>516402</b> | o-ring 94*2.5 NB70 D3770                              |
| 5 | <b>509207</b> | Head Ring Retainer Screw<br>(ND CAP M6*12 SS DIN 912) |

P-1351 A/B Netzsch 2 NE 80A Pump (1351 Lift Station)

Common parts #'s with P-35 pumps in **bold**

| Quantity | Part Number   | Description   |
|----------|---------------|---|
| 1        | 164410        | Stator 2NE80 SB                                       |
| 2        | <b>591983</b> | Stator o-ring (Ring Flat 155/174*3 PERB)              |
| 1        | <b>516228</b> | Casting seal (o-ring 155*4 NB70 D3770)                |
| 2        | <b>872656</b> | SM Gear Joint Seal<br>(Gear Jnt Seal NE80 SM PERB)    |
| 1        | <b>685746</b> | Gear Joint Complete NE80 ST/GG                        |
| 2        | 850790        | Rotor 2NE80 K 1.4571                                  |
| 2        | <b>516402</b> | o-ring 94*2.5 NB70 D3770                              |
| 5        | <b>509207</b> | Head Ring Retainer Screw<br>(HD CAP M6*12 SS DIN 912) |

P-1352 A/B Netzsch 2NE 100A Pump (1352 Lift Station)

Common parts with P1351 & P35 in **bold**

| Quantity | Part Number   | Description   |
|----------|---------------|---|
| 1        | 167239        | Stator 2NE100 SB                                      |
| 2        | 422425        | Stator o-ring (Ring Flat 195/218*3 PERB)              |
| 1        | 516521        | Casting Seal (o-ring 205*4 NB70 D3770)                |
| 2        | 873395        | SM Gear Joint Seal<br>(Gear Jnt Seal NE100 PERB)      |
| 2        | 685747        | Gear Joint Complete NE100                             |
| 1        | 850883        | Rotor 2NE100 H 1.4571                                 |
| 4        | 516516        | o-ring 122*3 NE170 D3770                              |
| 5        | <b>509207</b> | Head Ring Retainer Screw<br>(HD CAP M6*12 SS DIN 912) |

P-34 A Tarby (IWTP Sludge Tank)

| Quantity | Part Number | Description    |
|----------|-------------|----------------|
| 1        | 700-14BBAA  | Rotor          |
| 1        | 400-16BFAA  | Stator         |
| 2        | 610-13AJAK  | Buna o-ring    |
| 1        | 951-13BAAK  | Gear Joint Kit |

C. PM Scheduling

Preventative maintenance scheduling will be driven by Sidearm software package. Electrical hour meters will be installed in motor control panels of each pump to determine service actual time between service and frequency. As of June 1994 the only progressive cavity pumps placed in service are the lift station pumps and IWTP sludge tank pump.

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## Standard Operating Procedure IWOW-036

**TITLE: pH Instrumentation – Calibration, Preventative Maintenance, and Spares Schedule**

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**References:** (1) Signet 3090 Intelek-Pro pH controller manual (IWTP/OWTP)  
(2) Signet 2710/2711/2712 pH/ORP sensor manual (IWTP/OWTP)  
(3) Cole Parmer Digi-sense Digital pH/mV/ORP Meter Operating Manual (Lab Unit)  
(4) Cole Parmer Waterproof pH tester 2 Instruction Card (pocket field units)

**Enclosures:** None

**Tools:** pH Standard Buffer Solutions 4, 7, 10  
Thermometer  
5 gallon bucket  
3 Wide mouth plastic pint containers  
Squeegee bottle with distilled water  
Blotter towels  
Methanol (1 liter)  
Potassium Chloride Solutions (4 molar KCL) and (3 molar KCL)  
Small slotted screw drive

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### 1. PURPOSE

Establish calibration and preventative maintenance schedule for pH sensing equipment used in IWTP related activities.

### 2. ACTION

IWTP Operators

### 3. PROCEDURE

#### 1. Calibration Procedures

##### Signet Units

1. Carefully block out pH sensor unit from the process.
2. Unscrew and remove pH probe sensor from mounting and place the pH probe into the 7.0 buffer.
3. Press MOD button on keypad.
4. Press CAL button on keypad.
5. Allow LCD display to adjust for thirty seconds. If display does not show 7.00, press MOD button and adjust with arrow keys to 7.00 pH value and press the ENTER button to save setting.
6. Press CAL button on keypad and immerse probe in 4.0 or 10.0 pH solution.

7. Allow LCD display to adjust for thirty seconds. If display does not show 4.00 or 10.00 of respective pH buffer solution, press MOD button and adjust with arrow keys to the value of the pH buffer value and press the ENTER button to save setting.
8. Press pH button on keypad to restore unit to normal operation.
9. Reinsert pH electrode sensor mounting.
10. Open blocking valves and restore to service.

#### Cole Palmer Digi-sense pH/ORP Unit

1. Make the temperature of all buffer solution the same.
2. Press ON/OFF key to turn on the meter
3. Immerse pH probe in 7.0 buffer solution and allow equilibration for at least 30 seconds.
4. Press pH/MV key to select pH.
5. Adjust temperature control in degrees centigrade to temperature of 7.0 pH buffer.
6. Adjust standardized set screw with fine slotted screw driver to read 7.0 pH buffer.
7. Rinse probe with distilled water and blot dry.
8. Immerse pH probe into 4.0 or 10.0 pH buffer solution. If pH measurements are less than pH 6, select the 4.0 pH buffer. If the pH measurements are greater than pH 8, select the 10.0 pH buffer.
9. Allow the reading to stabilize, then adjust the slope control setscrew to the value of the second buffer.
10. Rinse probe with distilled water.
11. Calibration is complete.
12. Leave probe in KCL storage or equivalent probe storage solution. If solution is not available use tap water. Do not use distilled water to keep probe moist. If glass probe tip is dry – dip in KCL solution for 30 minutes or soak in tap water for two hours.

#### Cole Palmer Waterproof pH Tester 2 (pocket field units)

1. Turn on the pH tester by pressing the ON/OFF button.
2. Dip electrode into pH 7.0 buffer by ½ to an inch.
3. Press CAL button to enter calibrate mode. A “CA” will flash on the LCD display and the pH value will flash repeatedly. After at least 30 seconds press HOLD/ON icon to confirm a pH reading of 7.0.
4. Rinse the electrode with de-ionized or tap water.
5. If unit fails to calibrate within plus or minus 0.1 pH units of buffer solution, gives fluctuating readings in buffer solution, or shows error messages “E2” or “OR” in buffer solution try the following:
  - a. Soak electrode in lukewarm pH 4 solution to clean it and repeat calibration procedure.
  - b. If this fails replace the probe sensor element in accordance with the electrode replacement instructions.

6. If possible keep a small moistened paper or sponge in the electrode cap to keep sensor moist.
  7. If using pH tester for plant discharge or jar testing application, repeat calibration with pH 4 buffer if readings are below pH 6.
  8. If using pH Tester for plant discharge or jar application, repeat calibration with pH 10 buffer if readings are above pH 8.
2. Calibration Frequency

Signet Units

Batch Tanks - Once every two months or before a batch treatment is initiated whatever comes first.

T-4B Tank - Once a week

Sandfilter In-Line Unit - Once a week

T-4B Discharge to Clarifier In-Line Unit - Once a week

Cole Parmer Digi-sense pH/ORP Meter - Once every two weeks

Cole Parmer Waterproof Test 2 Meter - Once every two weeks or whenever using jar testing

3. Electrode Replacement

Signet Units

T-4B, LET discharge in-line, and Sandlifter in-line - Once every six months

Batch Tank Sensors - Once every nine months or whenever unit fails calibration

Cole Parmer Units - Once every nine months or whenever unit fails calibration

4. Spare Parts

Signet Units

Ring Units - Part# 3-8000.520 - Quantity 2

pH units - Part# 3-2700.300-A-3 - Quantity 3

Sensor Body O-rings - Part# 3-2712-300-2 - Quantity 6

Cole Parmer Digi-Sense

Electrode, polymer - Part# 5992-20 - Quantity 2

Cole Parmer pH Tester –

Electrode CPPWPSSEN02 - Part#59000-26 - Quantity 2

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## Standard Operating Procedure IWOW-039

**TITLE: Sodium Hydroxide Transfer from Storage Tank to Treatment Processes**

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**References:** (a) Material Safety Data Sheet for Caustic Soda 50% (CAS No. 1310-73-2)  
(b) IWOW-011, "How to Properly Characterize, Jar Test, Treat, and Discharge Full Tanks at the North Island Industrial Waste Treatment Plant (IWTP)"

**Enclosures:** (1) PPE Requirements for Specific Operations/Tasks (**OTH-01**)

- (3) Sodium Hydroxide Transfer to T1A/B (**CL-46**)
  - (4) Sodium Hydroxide Transfer to T5A/B (**CL-47**)
  - (5) Sodium Hydroxide Transfer to T6A/B (**CL-48**)
  - (6) Sodium Hydroxide Transfer to T30 (**CL-52**)
  - (7) Sodium Hydroxide Transfer to T32 (**CL-53**)
  - (8) Sodium Hydroxide Transfer to BTF (**CL-49**)
  - (9) Sodium Hydroxide Transfer to T4B (**CL-55**)
  - (10) Sodium Hydroxide Transfer to T23A (**CL-50**)
  - (11) Sodium Hydroxide Transfer to T23B (**CL-51**)
  - (12) Sodium Hydroxide Transfer from tote to Day Tank at NBPL (**CL-56**)
- 

### 1. PURPOSE

To provide forms and guidance for transferring solution from the Sodium Hydroxide Storage Tanks to the Biotrickling Filter System, Sodium Hydroxide Day Tanks, and batch treatment tanks using sodium hydroxide in the treatment process. Also to provide forms and guidance for transferring solution from tote or truck into the Sodium Hydroxide Storage Tanks.

### 2. ACTION

This procedure applies to IWOW Operators.

### 3. PROCEDURE

- 1) Special care must be taken when working with this chemical. Operators should be thoroughly trained according to the Professional Qualification Standard (PQS) regarding the hazards of sodium hydroxide before starting any work involving this chemical. The Operators transferring the sodium hydroxide shall continuously monitor and supervise the operation, never leaving the operation unattended, be aware of potential problems and dangers (overfilling, leaks, etc.), and remain alert at all times.
- 2) Tanks using sodium hydroxide in the treatment processes include:
  - IW Batch Tanks, T-1A and T-1B
  - OW LET Tanks, T-4B
  - Biotrickling Sodium Hydroxide Day Tank
  - Sodium Hydroxide Day Tank, T-30/32
  - Chrome Batch Tanks, T-5A and T-5B

- Cyanide Batch Tanks, T-6A and T-6B
  - OW Plate Separator at NBPL.
- 3) At a minimum, all staff responsible for implementing work by this SOP must read and understand its contents, and sign a Document Review Training record.
  - 4) For safety purposes, this is a two man operation. For Operators not previously involved in this operation they shall, at a minimum, review the contents of **Reference (a)** and the PPE requirements in **OTH-01**.
  - 5) Specific information on the equipment and processing operations can be found in the technical manuals for the equipment and SOPs for each facility. To supplement these instructions, and provide the most current developments for Operators, written checklists for transferring sodium hydroxide from storage tanks to treatment tanks are provided as **Enclosures 2** through **11**.
  - 6) Completed checklists are to be reviewed by the lead Operator/Supervisor and then filed with the daily Inspection Reports at the end of each shift or when the checklist has been completed.
  - 7) **Enclosures 2** through **11** are used as guidance and are not to be used without prior training and experience in the operation of the facilities. The checklists are not a substitute for proper on-the-job training or a job safety analysis (JSA)
  - 8) Whenever there are significant changes in the operation of the facilities this Standard Operating Procedure is to be updated as soon as practicable. Modifications of checklists and forms of SOPs are to be made in accordance with SOP IWOW-001.

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## Standard Operating Procedure IWOW-040

**TITLE: NBCNI Hydrogen Peroxide Transfer from Storage Tank to Day Tank**

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**References:** (a) Material Safety Data Sheet for Hydrogen Peroxide (CAS No. 7722-84-1)  
(b) Energy Control Program (LOTO)

**Enclosures:** (1) PPE Requirements for Specific Operations/Tasks (OTH-01)

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### 1. PURPOSE

To provide procedures for transferring hydrogen peroxide (50% wt.) from the 10,000 gallon Hydrogen Peroxide Storage Tank T-901, located near Building 795, to Hydrogen Peroxide Tank T-17 (Day Tank) at NBCNI.

### 2. ACTION

This procedure applies to IWOW Operators and Personnel.

#### **SAFETY NOTE:**

**When working on the transfer pump, ensure that the discharge pipe from the tank is secured/supported prior to removing any bolts or flanges from the line. The pipe is made of high purity aluminum and is very fragile. Failure of the pipe will cause a release of the entire contents of the tank into the secondary containment berm.**

### 3. PROCEDURE

#### 3.1 General

- a) Special care must be taken when working with this chemical. Operators should be thoroughly trained regarding the hazards of hydrogen peroxide before starting any work involving this chemical. The Operator transferring the hydrogen peroxide shall continuously monitor and supervise the operation, never leaving the operation unattended, be aware of potential problems and dangers (overfilling, leaks, etc.) and remain alert at all times.
- b) This is a two-person operation. In accordance with the site-specific addendum to the Site Safety and Health and Plan, prepared by the Operator, the second party will be available to observe the operation. The second party observer does not need to be an Operator. For Operators not previously involved in this operation, they shall at a minimum, review the contents of **References (a), (b)**, and this SOP.
- c) For Operators not previously involved in this operation they shall, at a minimum, review PPE the requirements in **OTH-01**.

#### 3.2 Prior to Transferring Hydrogen Peroxide

- a) The operator will wear the proper personal protective equipment (PPE). The PPE will include:
  - Hard hat.
  - Full face shield (in addition to chemical worker's safety goggles).
  - Chemical resistant (rubber) boots and gloves.

- Chemical protective suit (e.g., chem. jacket and pants). The jacket should be buttoned up to the neck, the trousers worn outside the boots, and the shirt sleeves to be worn over the gloves.
- b) Verify there is sufficient hydrogen peroxide in the Hydrogen Peroxide Storage Tank by visually checking the level gauge on the tank.
- c) Open the tank outlet valve D1 (when not in use this valve will always remain tagged closed).
- d) The flushing line valve D2 will remain closed during transfer operations.
- e) The Hydrogen Peroxide Transfer Pump inlet valve D3 will always remain **open** (tagged open). The only time this valve will be closed is when documented (Maximo) maintenance operations are occurring on the line or pump.
- f) The valve D4 on the outlet side of the Hydrogen Peroxide Transfer Pump will always remain **open** (tagged open) to prevent pressure buildup that will destroy the pump seals. The only time this valve will be closed is when there are maintenance operations occurring on the line or pump.
- g) The vertical vent line valve D6 on the hydrogen peroxide transfer line inside the T-901 secondary containment will remain closed (tagged closed) at all times. The only time this valve will be opened is when there are maintenance operations occurring on the line or pump.
- h) Confirm that the Hydrogen Peroxide Transfer Pump switch mounted on the local control panel at the Hydrogen Peroxide Storage Tank is in the ON position.
- i) Go to the receiving Hydrogen Peroxide Day Tank T-17 and ensure the tank inlet valve D7, located overhead approximately 1-foot from the top of the tank, is **open**. This valve should also **always be left open** to prevent a pressure build-up. The only time this valve will be closed is when there are maintenance operations occurring on the tank, the line or the pumps.

### 3.3 Transferring Operation

- a) Go to the Main Electrical Control Panel (MCC-10) and move the power circuit breaker to the Hydrogen Peroxide Transfer Pump to the ON position. Then turn the Hand-Off-Auto (HOA) switch to the HAND position. The Hydrogen Peroxide Transfer Pump should then be energized and begin pumping.
- b) Go back to the receiving Hydrogen Peroxide Day Tank T-17 and verify that the transfer pump at the Hydrogen Peroxide Storage Tank T-901 is working (hydrogen peroxide will be entering T-17).
- c) Verify via radio with the person at the Hydrogen Peroxide Storage Tank T-901 that there are no leaks on any of the pipe fittings or the transfer pump.
- d) Go back to the receiving Hydrogen Peroxide Day Tank T-17 and monitor the level of the tank.
- e) After the desired amount of hydrogen peroxide is in T-17, go to the Main Electrical Control Panel (MCC-10) and turn the HOA switch to the OFF position and move the power circuit breaker to the OFF position.

#### Completion of Transfer Operation

- a) Go to the Hydrogen Peroxide Storage Tank T-901 and secure the tank outlet valve.

- b) Hook up the plant water hose to the flushing valve (D2).
- c) Open the flushing line valve
- d) Flush the transfer piping with 200 gallons of plant water. Once the Day Tank T-17 has 200 gallons of plant water secure the plant water and transfer the contents of T-17 to the T-1 tank that is being treated.
- e) Ensure that all valves that are supposed to be closed in section 3.2 c, d, and g are closed after flushing.
- b) If the spare air diaphragm pump is used, then it should be flushed and decontaminated in the bermed IWTP loading area along with the hoses in accordance with decontamination procedures provided in the site-specific addendum to the Site Safety and Health Plan, prepared by Operator.
- c) When the operation is complete, the Operator shall remove all PPE in the IWTP bermed loading area and follow decontamination procedures provided in the site-specific addendum to the Site Safety and Health Plan, prepared by Operator.

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# Standard Operating Procedure IWOW-041

## TITLE: Sodium Metabisulfite or Ferrous Sulfate Solution Preparation and Transfer to Batch Treatment Tank

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- References:** (a) Material Safety Data Sheet for Sodium Metabisulfite (CAS No.: 7681-57-4)  
(b) Material Safety Data Sheet for Ferrous Sulfate (CAS No.: 7720-78-7 [anhydrous] 7782-63-0 [heptahydrate])  
(c) IWOW-011, "How to Properly Characterize, Jar Test, Treat, and Discharge Full Tanks at the North Island Industrial Waste Treatment Plant (IWTP)"

- Enclosures:** (1) PPE Requirements for Specific Operations/Tasks (OTH-01)
- 

### 1. PURPOSE

To provide procedures for transferring dry bagged sodium metabisulfite and/or ferrous sulfate to the 1,600 gallon Chemical Mixing Tanks, T-20A and T-20B, preparation of the sodium metabisulfite or ferrous sulfate solution, and transfer to the treatment process. The Chemical Mixing Tanks are located across from Building 788.

### 2. ACTION

This procedure applies to IWOW Operators and Personnel.

### 3. PROCEDURE

#### 3.1 General

- a) Special care must be taken when working with the sodium metabisulfite and ferrous sulfate, hereafter referred to as the "chemicals." Operators should be thoroughly trained regarding the hazards of these chemicals before starting any work. The Operators will be working with the chemicals in both the dry and liquid form. The Operator transferring the chemicals shall continuously monitor and supervise the operation, never leaving the operation unattended, be aware of potential problems and dangers (spilling dry powder, overfilling, leaks, etc.), and remain alert at all times.
- b) Tanks receiving these chemicals in the treatment processes include:
  - Mixed Metals Tanks, T-1A and T-1B
  - Chrome Batch Tanks, T-5A and T-5B
  - Cyanide Batch Tanks, T-6A and T-6B
  - LET Tank T-4B (Only if tank T-4B contains industrial waste)
- c) This is a two-person operation. For Operators not previously involved in this operation, they shall, at a minimum, review the contents of **References (a), (b), and (c)**, and this SOP.
- d) For Operators not previously involved in this operation they shall, at a minimum, review the PPE requirements in **OTH-01**.

#### 3.2 Preparation of Sodium Metabisulfite and Ferrous Sulfate Solutions

- a) To prevent contamination, the Operators will utilize mixing tank T-20A to mix sodium metabisulfite and T-20B to mix ferrous sulfate.

- b) Operators will wear the proper personal protective equipment (PPE). The PPE will include:
- Hard hat.
  - Full-face respirator with organic vapor cartridges. New cartridges are used for each transfer performed.
  - Chemical resistant (rubber) boots and gloves.
  - Chemical protective suit (jacket and pants). The jacket should be buttoned up to the neck, the trousers worn outside the boots, and the shirt sleeves to be worn over the gloves.
- c) Check location of nearest safety shower and eyewash.
- d) Open the hatch and ensure that tank T-20A or T-20B has been properly flushed and drained before using.
- e) From the local control panel located on the Chemical Transfer Pump platform, energize both tank's (20A and 20B) Motor Operated Valve (MOV) and ensure that whichever tank IS NOT MIXING CHEMICALS (20A or 20B) has it's MOV CLOSED (Red Light) prior to the proceeding to the next step.
- f) Add plant water to T-20A or T-20B to generate the applicable concentrations of these chemicals at the volume calculated, following IWOW-011 procedures (**Reference c**).
- g) Confirm that the T-20A or T-20B mixer switch mounted on the local control panel on the T-20A or T-20B platform is in the ON position. Normally it should always be in the ON position.
- h) Go to the Main Electrical Control Panel and move the power circuit breaker handle to the T-20A or T-20B mixer to the ON position. Then turn the HAND-OFF-AUTO (HOA) switch to the HAND position. The T-20A or T-20B mixer should then be energized and begin mixing.
- i) A person qualified to operate a forklift will move, by forklift, a pallet of the chemical bags to the edge of the tank platform.
- j) The person on the platform will open the hatch on T-20A or T-20B and empty the contents of the bag on the tank's hatch grill.
- k) The number of bags of chemicals to be added is calculated following IWOW-011 procedures and as specified in the full scale treatment protocol.
- Because of their volume capacity, Chemical Mixing Tanks T-20A and T-20B are each limited to a maximum of 50 bags (50 pounds per bag) of chemical at a time. If the receiving tank requires more than 50 bags of the chemical (per full scale protocol), then the operator will empty no more than 50 bags at a time, let it mix for awhile, then transfer the chemical to the receiving tank. Repeat the mixing procedure until the required amount has been transferred.
- l) Clean up any chemical powder that may have spilled.
- m) Secure the hatch on T-20A or T-20B.
- n) The mixer is to remain on during the transfer operation.

### 3.3 Prior to Transferring the Chemical

- a) Verify that all chemical pipeline inlet valves to the tanks listed in Section 3.1b are closed except for the receiving tank.
- b) From the local control panel located on the Chemical Transfer Pump platform, energize both tank's (20A and 20B) Motor Operated Valve (MOV) and ensure that the tank whose

chemicals are being transferred (20A or 20B) MOV is open (Green Light) and that the tank NOT BEING TRANSFERRED has it's MOV CLOSED (Red Light) prior to engaging the double diaphragm pump.

- c) Verify that the valve connected to the side of the tank is shut.
- d) Verify that the valves on the inlet and transfer side of the Chemical Transfer Pump are open.
- e) Walk the chemical pipeline and open all valves in the pipeline from T-20A or T-20B to the tank receiving the chemical.

### 3.4 During Transfer Operations

- a) The air driven 2" Double Diaphragm Sandpiper Pump will be used to transfer the chemicals to the appropriate treatment tank.
- b) Operate the pump at 40 psi using the air supply ball valve and regulator to control the flow rate to the treatment tank, taking care to reduce the vortex in tank 20A or 20B, whichever one is being used.
- c) Check for leaks on any of the pipe fittings or the transfer pump.

### 3.5 Completion of Transfer Operation

- a) Pump until the contents have reached the top of the mixer, verified visually by the Operator.
- b) After the chemicals have reached the top of the mixer, turn the mixer HOA switch to the OFF position and move the power circuit breaker handle to the OFF position at the Main Electrical Control Panel.
- c) Add plant water to the chemical tank and continue to pump T-20A or T-20B until empty and the lines are flushed.
- d) After the tank is emptied to the bottom of the tank, turn the mixer HOA switch to the OFF position and move the power circuit breaker handle to the OFF position at the Main Electrical Control Panel. Close the ball valve supplying air to the transfer pump.
- e) Secure the hatch on T-20A and/or T-20B.
- f) The Operator at the tank receiving the chemicals will then shut the inlet valve at the tank and all other valves in the pipeline back to T-20A or T-20B.
- g) Both operators will carefully inspect for leaks on any of the pipelines, connections, valves, and pumps in the chemical feed system.
- h) When the operation is complete, the operators shall remove all PPE in the IWTP bermed loading area and follow decontamination procedures provided in the site-specific addendum to the Site Safety and Health Plan, prepared by Operator.

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## Standard Operating Procedure IWOW-042

**TITLE: Sulfuric Acid Transfer from Storage Tank Located Across from Building 788 to the Treatment Process**

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**References:** (a) Material Safety Data Sheet for Sulfuric Acid (CAS No: 7664-93-9)  
(b) IWOW-011, "How to Properly Characterize, Jar Test, Treat, and Discharge Full Tanks at the North Island Industrial Waste Treatment Plant (IWTP)"

**Enclosures:** (1) PPE Requirements for Specific Operations/Tasks (OTH-01)

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### 1. PURPOSE

To provide procedures for transferring sulfuric acid from the Sulfuric Acid Storage Tank to the treatment process.

### 2. ACTION

This procedure applies to all IWOW Operators and Personnel.

### 3. PROCEDURE

#### 3.1 General

- a) Special care must be taken when working with this chemical. Operators should be thoroughly trained regarding the hazards of sulfuric acid before starting any work involving this chemical. The Operators transferring sulfuric acid shall continuously monitor and supervise the operation, never leaving the operation unattended, be aware of potential problems and dangers (overflowing, leaks, etc.), and remain alert at all times.
- b) Tanks that use sulfuric acid in the treatment process include:
  - Mixed Metals Tanks, T-1A and T-1B
  - IW/OW LET Tank, T-4B
  - Chrome Batch Tanks, T-5A and T-5B
  - Cyanide Batch Tanks, T-6A and T-6B
- c) For safety purposes, this is a two-person operation. For Operators not previously involved in this operation, they shall, at a minimum, review the contents of **Reference (a)**.
- d) For Operators not previously involved in this operation they shall, at a minimum, review the PPE requirements in **OTH-01**.

#### 3.2 Prior to Transferring Sulfuric Acid

- a) Verify that all sulfuric acid inlet valves are closed to all tanks listed in 3.1b, except for the receiving tank.
- b) Check the location of nearest safety shower or eyewash and verify it is in working condition.

- c) Both Operators will wear the proper personal protective equipment (PPE) in accordance with **Enclosure (1)** PPE Requirements for Specific Operations/Tasks (OTH-01).
- d) Verify that the valves on the inlet and transfer side of the Sulfuric Acid Transfer Pump are open.
- e) Verify that there is liquid in the transparent hose at the Sulfuric Acid Transfer Pump.
- f) Confirm by the ultrasonic level indicator that there is sufficient sulfuric acid to complete the treatment process.
- g) Verify that the transfer valve at the end of Sulfuric Acid Transfer Pump discharge hose and the main pipeline header is open.
- h) Walk the pipeline and open all valves in the pipeline from the Sulfuric Acid Storage Tank to the tank receiving with sulfuric acid.
- i) If the receiving tank has a mixer, confirm that the mixer is on before starting the transfer.

### 3.3 Transferring Operation

- a) After communicating via radio that all the necessary valves are open, the operator at the Sulfuric Acid Transfer Pump will place the HAND-OFF-AUTO (HOA) switch, next to the pump, in the HAND position.
- b) The operator will then open the cabinet door and flip the toggle switch to the ON position to start the pump.
- c) During the transfer of sulfuric acid, both operators will be alert for leaks and other equipment failures.
- d) Sulfuric acid will be added in steps and the pH will be checked after each step.
- e) Temperature will be monitored during the addition of sulfuric acid. If the temperature of the tank contents exceeds greater than 20 °F above the ambient temperature, then stop acid addition until the temperature drops below ambient.
- f) Start and stop the Sulfuric Acid Transfer Pump in accordance with steps 3.3a and b, and 3.4a and b, respectively.
- g) The operators will continue to add sulfuric acid until the specified pH, as determined by the chemist's tank treatment protocol, has been achieved and stabilized for at least 10 minutes.
- h) When the necessary amount of sulfuric acid is provided to the tank, as determined in the treatment procedures (IWOW-011), the transfer operation will be shut down.

### 3.4 Completion of Transfer Operation

- a) The operator at the Sulfuric Acid Storage Tank will turn off the Sulfuric Acid Transfer Pump at the toggle switch inside the cabinet.
- b) Once the Sulfuric Acid Transfer Pump is off, the HOA switch will be turned to the OFF position.

- c) The operator at the tank receiving sulfuric acid will then shut the inlet valve at the tank and all other valves in the pipeline back to the discharge valve feeding the main pipeline header.
- d) The valves between the main pipeline header and the Sulfuric Acid Storage Tank will remain open to relieve any pressure in the line.
- e) Both operators will carefully inspect for sulfuric acid leaks on the pipelines, connections, valves, and pumps.
- f) When the transfer operation is complete, the operators shall remove all PPE in the IWTP bermed loading area and follow decontamination procedures provided in the site-specific addendum to the Site Safety and Health Plan.

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## Standard Operating Procedure IWOW-043

**TITLE: Vapor Carbon Management at NBCNI IWOW Treatment Plant and NBSD BOWTS**

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**References:** (a) Air Pollution Control District Permit # 910680 (NBCNI)  
(b) Operation and Maintenance Manual for Vapor Phase Adsorbers

**Enclosures:** (1) Spent Activated Carbon Profiles(OTH-73)  
(2) Vapor Carbon Bed Air Monitoring Report (OTH-71)  
(3) NBCNI Carbon Fan Run Hour Meter Log—Weekly(OP-32)

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### 1. PURPOSE

To provide guidance on management of vapor-phase carbon in use at the NBCNI IWOW treatment plant and NBSD BOWTS for air pollution control.

### 2. ACTION

Service Provider IWOW plant operations personnel.

### 3. BACKGROUND

The Industrial Waste Treatment Plant (IWTP)/Oil Recovery Plant (ORP) at NBCNI and the NBSD BOWTS are equipped with granular activated carbon (GAC) vapor adsorbers on specific tanks for controlling odor and/or volatile organic compounds (VOCs). At NBCNI, under normal operating conditions, offgas from the tanks is continuously routed through the Biotrickler (BTF) for contaminant reduction. The BTF effluent is exhausted through two 1,500 lb GAC polishing beds. The individual carbon units, each being 350 lbs, are manually operated if operation of the BTF is halted. The odor control equipment at NBSD consists of 10 active and 18 passive carbon units.

### 4. PROCEDURE

#### 1. Daily Carbon Fan Run Hour Meter Log

- a. NBCNI Annotated readings will be taken during the mid watch (2200-0600) each day, on the NBCNI Carbon Fan Run Hour Meter Log (See **Enclosure 4**; OP-32). On this form the date, operator's initials and the carbon fan run hours will be recorded. The carbon fan run hours can be found on the Motor Control Centers (MCC) 10ft in front of T1A and on the catwalk behind T4A. When the carbon fan run hour is nearing the sampling time (every 168 hours of operation, see Table 1 of this procedure), the Operators must alert the EPS and the Lead Operator. The Meter Log will be submitted to the EPS at the end of each week.

#### 2. GAC Units

**References (a) and (b)** establish criteria for compliance with air pollution control district (APCD) permit. The table below summarizes the schedule for monitoring and replacement of activated carbon as required for permit compliance for each facility. Exhaust fan run times are recorded on a monthly basis by plant operators to establish hours of the small GAC (168 hour) carbon unit operation. VOC concentrations for the Biotrickler are measured on a monthly basis by the EPS and recorded on a Vapor Carbon Bed Air Monitoring Report (**Enclosure 2**; OTH-071).

**Reference (c)** provides information on the proper operation and maintenance of these units. The recommended preventive maintenance of these units includes a monthly pressure-loss check, a quarterly carbon bed surface inspection, and a carbon change out frequency based on odor or VOC breakthrough.

**Table 1**  
**NBCNI**

| Canister Size | Canister ID   | Monitoring Frequency         | Change Out If:  |
|---------------|---|------------------------------|---|
| 1,500 lbs     | BTF1, BTF2  | Monthly                      | VOC gas concentration above 15 ppmv AND outlet is greater than 10% of the inlet concentration |
| 300-350 lbs   | T-1A, T-1B,<br>T-4A, T-4B,<br>T-8/-24, T-7,<br>T-34 | Every 168 hours of operation | VOC gas concentration above 15 ppmv AND outlet is greater than 10% of the inlet concentration |

Note: alternate condition for carbon change out occurs when differential pressure drop through the vessel is equal to or greater than 10 psi.

The results from the monthly sampling are submitted to the Environmental Protection Specialist (EPS) for review. The EPS will review the data in terms of the permit requirements.

### 3. Spent Carbon Disposition

When the carbon units at NBCNI no longer meet the conditions of the San Diego Air Pollution Control District (APCD) permit, then the carbon must be changed out. In order to complete this, an email must be submitted to the Company's subcontractor requesting the change out. The email must include the specific carbon bed and the date when the carbon is to be changed. All carbon change out paperwork will be filed and/or uploaded to the project website and made available for review by CNRSW Inspectors and the APCD.

Turnkey service is conducted by a vendor contracted to remove and transport spent carbon for either off-site regeneration or disposal, and supply replacement carbon. This service is scheduled as needed per the respective facility change out requirements as indicated in the above tables. Spent carbon is accepted by the vendor from NBCNI through approved waste profiling conducted by the vendor supplying carbon services. These profiles are generated by collecting a representative sample of spent GAC drawn from each of the vapor adsorbers and analyzing for contaminant concentrations to determine the feasibility of submitting the spent GAC to an off-site facility for regeneration. The current vendor-approved profiles for spent carbon (**Enclosure 1**) from the two facilities certify that the spent carbon is **NOT** a State or RCRA hazardous waste.

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# STANDARD OPERATING PROCEDURE IWOW-045

**TITLE: Oil Disposition as Recovered Oil or Waste Oil**

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**References:** (a) Military Specification, Fuel Oil Reclaimed, MIL-PRF-24951B (10 Feb1995)  
(b) Government Safety Data Sheet for Fuel Oil Reclaimed (FOR)  
(c) IWOW-020 Waste Acceptance Criteria for Bilge and Oily Waste Treatment Systems

**Enclosures:** (1) Uniform Hazardous Waste Manifest (DTSC 8022A) (OTH-96)  
(2) Recovered Oil Lifting Report (OTH-103)  
(3) U.S. Government Bill of Lading (Standard Form 1103) (OP-30)  
(4) Example of Pickup Order (OP-37)  
(5) Recycled Oil Certification Report (OTH-126/127)  
(6) Sale of Fuel Oil Reclaimed Invoice example (OTH\_123)  
(7) NBCNI IWOW Recovered Oil Transfer Valve Alignment Verification Checklist (CL-38)

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## 1. PURPOSE

To provide guidance for disposal of recovered fuel oils from the Oil Recovery Plant (ORP), the Bilge and Oily Waste Treatment Systems (BOWTS) as exempt from hazardous waste definition, and as a material. This SOP also provides guidance for disposal of recovered oil meeting specific criteria as exempt, recyclable oil.

## 2. ACTION

This procedure applies to IWOW Operators, Environmental Protection Specialists and Lead Operators.

## 3. QUALIFICATION AND TRAINING REQUIREMENTS

At a minimum, all IWOW (Industrial Waste and Oily Waste) personnel for implementing work covered by this SOP will read and understand its contents, sign and date the training record.

## 4. DEFINITIONS

The following definitions are applicable to this SOP. These definitions are consistent with California Health and Safety Code, Division 20, Chapter 6.5, Article 13 and Military Specification, Fuel Oil Reclaimed.

- Bilge Water – Bilge water is a mix of primary water with some oil (normally less than 5 percent) and other unspecified substances resulting from the normal operation of a vessel. Oily waste produced by means other than the normal operation of a vessel is not bilge water.
- BOWTS Facility – Oily water and waste oil treatment facilities operated by the Service Provider at NBSD, NAB and NBPL.
- Lubricating Oil – Includes any oil that is intended for use in machinery (engine crankcase, transmission, gearbox, or differential in an automobile, bus, truck, vessel, plane, train, heavy equipment) powered by an internal combustion engine. Lubricating oil includes oil intended for use in an internal combustion. Lubricating oil also includes consumer additives that are intended to be mixed with lubricating oils in an internal combustion engine. Per SOP IWOW-020 [Reference (c)], synthetic oil in quantities greater than 100 gallons is not to be accepted into the BOWTS and OW treatment systems.

- Oily Waste – Oil mixed with water or other fluids. Typically, bilge water and compensation water are considered oily waste. Refer to IWOW-020 for oily waste acceptance criteria at the BOWTS and IWOW Plant, ORP.
- Oil – Any kind of petroleum, liquid hydrocarbons, or petroleum products or any fraction or residue there from, including, but not limited to, crude oil, bunker fuel, gasoline, diesel fuel, aviation fuel, oil sludge, oil refuse, oil mixed with waste, and liquid distillates from unprocessed natural gas.
- Waste Oil – Oil of any kind or in any form including, but not limited to, petroleum, fuel oil, oily sludge, oil refuse, and oil mixed with waste.

## 5. PROCEDURE

The Oil Recovery Plant (ORP) treatment process results in two components: Sewerable effluent and recovered oil. The vast majority of influent to the ORP is bilge water that does not exhibit characteristics of hazardous waste per 22 CCR 66261. No listed waste is treated in the ORP. Based on analysis results for the recovered oil showing it met the Standards of Purity listed in the Health and Safety Code, the recovered oil is sent for recycling. Based on a review of the regulations, the results of the past analysis, input from the Department of Toxic Substances control and in consultation with the Navy, it has been determined that the recovered oil does not meet the definition of waste because it is being sent for reclamation and the Navy is receiving payment for the recovered oil.

In consultation with the Navy, the recovered oil has been profiled with the receiving facilities and the recovered oil will be tested for the criteria required by the receiving facility. The current criteria includes: Flashpoint, API Gravity, and Percent Water. Additional analysis may be performed as requested by the receiving facility.

- Operations personnel will transfer the recovered oil to tankers for shipment. At the NBCNI ORP, the Recovered Oil Transfer Valve Alignment Verification Checklist (CL-38) will be used to properly align the valves for the transfer operation.
- Recovered oil must not be co-mingled with listed waste.
- Incoming waste must have a specific gravity of less than 1.
- If listed waste is mixed with the recovered oil, the recovered oil would meet the definition of hazardous waste and the affected batch would need to be managed accordingly. The Service Provider would work with the NTR to determine an appropriate management method for the batch.

### 5.1 Recovered Oil Testing to Determine Disposition

Samples will be collected in a representative fashion in bottles provided by the receiving lab and submitted to the designated Lab or Bldg M-9 NBCNI for delivery to the designated Fuels lab. A tag will be affixed to the bottle stating what base and what tank the sample represents with analysis for Flashpoint, API Gravity and Base Sediments and Moisture and the EPS or designee email address. Results will be delivered via email back to the EPS or designee responsible for scheduling truck pickups. An MRF must be completed and signed by an NTR prior to the sample being taken to the lab.

At North Island:

The day before you drop off a sample for analysis at M-9, call the lab, ask them to drop off a another sample bottle the following day at M-9. Drop off the sample at M-9 the following day and get the empty sample bottle for the next tank.

At Naval Base San Diego:

The day before you drop off a sample for analysis at the lab, call and ask them to have a 500 ml wide mouth amber bottle the following day at their lab for pickup when you drop off the full sample bottle. Drop off the sample bottle at the lab and get a 500 ml wide mouth amber bottle in return.

## 5.2 Disposition Options

Upon receiving the analytical results from the analytical laboratory, evaluate whether the load meets the receiving facility acceptance criteria.

- If the oil meets the receiving facility acceptance criteria, follow the reclamation option.
- If the oil does not meet the receiving facility acceptance criteria, it must be dewatered again and/or treated with a stronger demulsifier.
- If the oil still does not meet the receiving facility acceptance, determine an appropriate management method in coordination with Navy Technical Representative.

### a) Reclamation Option:

This option generates a revenue flow and is the preferred option. To manage the recovered oil with a fuel broker, the IWOW Manager or designee will:

- 1) Complete the pick-up order (see **Enclosure 4**, example of Pickup Order Form) to dispose of the oil through a fuel oil broker.
- 2) Submit the pick-up order along with a copy of the analytical results to the fuel broker.
- 3) Consult with the fuel broker to agree on a date for pick-up and how many trucks will be required.
- 4) Obtain the name of the recovered oil transporter and receiving facility.
- 5) Complete the Oil Lift packages for each load : government Bill of Lading(see **Enclosure 3**), copy of analytical, Oil certificate (see **Enclosure 5**)
- 6) Fill out the Oil Lifting Report (see **Enclosure 2**) and submit to the fuel broker
  
- 7) Complete Invoice (see **Enclosure 6**, Sale of Fuel Oil Reclaimed Invoice example) and submit to fuel broker and the Residual Organization Subject Matter Expert..

### b) DLA Disposal Option:

If material is determined to not be acceptable by the reclamation facility, IWOW manger or designee will work with the Navy to coordinate disposal. Manifests may be needed for the oil using the appropriate waste codes as determined by the analysis.

### 5.3 Transfer/Management Documentation

The fuel broker requires the following documentation: U.S. Government Bill of Lading, (**Enclosure 3**), Recycled Oil Shipment Certification Report (**Enclosure 5**) and a copy of the analytical results from the batch of recovered oil to be transported.

a) Bill of Lading:

Each shipment of recovered oil that leaves the facility shall meet Department of Transportation (DOT) requirements by carrying a Bill-of-Lading (BOL).

- 1) Ensure the DOT shipping name reads UN1268, Petroleum Product, 3, PGIII".
- 2) Ensure the gross gallons are recorded and a copy of the oil packet is retained for record-keeping purposes.

b) Recycled Oil Shipment Certification:

- 1) Using OTH-126 (NBCNI) or OTH-127 (NBSD) ensure that the laboratory data, quantity of oil shipped in gallons, bill of lading number, and date of shipment lines are filled out with the accurate information.
- 2) Print your name and sign the document at the bottom.

c) Laboratory Data

- 1) Ensure that a copy of the laboratory data is included in every shipment.

### 5.4 Reimbursement Mechanisms

Internal mechanisms have been established to obtain reimbursement for the oil managed via fuel broker.

d) Direct Reimbursement Method:

After a complete batch is sent to the fuel broker's facility, a summary of the net gallons received is submitted by the fuel broker for comparison and invoicing purposes.

- 1) The fuel broker generates a metering report indicating the volume (gallons) of recovered oil and the unit price (dollars per gallon) in effect when the recovered oil is received at the fuel broker's facility.
- 2) The Recovered Oil Lifting Report (**Enclosure 2**) documents the meter readings by the Service Provider and shows the volume transported to the fuel broker.
- 3) Operators will submit the completed Recovered Oil Lifting Report to the EPS or designee after the lifting is completed.
- 4) EPS or designee will compare both documents. If there is a discrepancy greater than five percent, the EPS will contact the fuel broker and resolve the discrepancy.
- 5) EPS or designee will generate an invoice using the established Excel format and submit it to the fuel broker.
- 6) The fuel broker will generate a check in that amount to the "Dept. of Treasury, c/o NAVFACSW. "
- 7) The Residual Organization Subject Matter Expert shall be responsible for ensuring that reimbursement is occurring.

**Table 1**  
**Standards and Tests for Disposition of Oil**

| Contaminant           | Standard         | Test Method   |
|-----------------------|------------------|---|
| Flashpoint            | 100°F or greater | 1010A Pensky-Martens, ATSM D-93-80  |
| Water and Sediment    | 2%               | ASTMD-1796  |
| Sediment (% Moisture) | 0.5% or less     | ASTM D 473 -  |
| API Gravity @ 60°C    | 25-40            | API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method), or similar ASTM D287 |

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# Standard Operation Procedure IWOW-048

**TITLE: Operation for Recovered Oil Management at the Naval Base San Diego  
Bilge and Oily Waste Treatment System**

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**References:** (a) SOP IWOW-005 Waste Flow Log Records

**Enclosures:** (1) Recovered Oil Tanks T-302 and T-303 Sample Chain of Custody (CoC 019)  
(2) Recovered Oil Tank T-304 Sample Chain of Custody (COC 019)  
(3) Recovered Oil Tank T-304 Sample Lab Analytical Results (OTH-77)  
(4) U.S. Government Bill of Lading Form (OP-30)  
(5) Document Package for Trucks Transporting Recovered Oil Offsite (SF-04)  
(6) Waste Flow Log (OP-19)  
(7) Waste Flow Log Example (SF-05)  
(8) PPE Requirements for Specific Operations/Tasks (OTH-01)  
(9) Recovered Oil Lifting Report (OTH-103)

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## 1. PURPOSE

To provide guidance to all personnel on the procedures for obtaining services to remove and dispose of the recovered oil from the Naval Base San Diego Bilge and Oily Waste Treatment System facility.

For operators not previously involved in this operation they shall, at a minimum, review the PPE requirements in **OTH-01**.

## 2. ACTION

All IWOW personnel

## 3. PROCEDURE

1. Recovered oil pickup shall be initiated when the facility has accumulated oil in two or more of the recovered oil tanks (ROT) T-302, T-303, and T-304. ROT tanks T-302 and T-303 shall not be filled in excess of approximately 50,500 gallons. ROT tank T-304 shall not be filled in excess of approximately 100,000 gallons. Once the tank(s) is filled, it is then secured and oil will not be transferred to the secured tank(s). The ROT is then required to sit undisturbed for a minimum of 24 hours.
2. After letting the ROT sit for 24 hours, the tank is ready to be checked for water. To perform this step, use either an oil water interface probe or water detecting paste. If a foot of water or more is detected in the tank(s), then dewater the tank to the LET's via the drainage basin by opening the drain valve approximately  $\frac{1}{4}$  of a turn. This process must be monitored by the operator(s) to avoid overfilling the drainage basin. If possible, the ROT is then topped off with oil and the settling and dewatering process is then repeated until the water is reduced as much as possible.
3. An Operator will collect samples from tank(s) that need delivery services. Once the tank(s) has been sampled, oil will not be transferred to the secured tank(s):
  - For ROT tanks T-302 and T-303 collect 500 milliliters from tank T-302 and 500 milliliters from T-303. Combine the two samples into one 250 ml wide mouthed jar. Secure with a tag with the following information; Sampler Name, ROT #, Date

and Time, Location, Contact Number, Flash Point, Specific Gravity, and Sediment & Water. Complete a Chain of Custody (COC) form to accompany the sample. An example of a COC specific to tanks T-302 and T-303 is provided in **Enclosure 1. An MRF must be completed and signed by the DGR before it goes to the lab for analysis.**

- For ROT tank T-304, collect the sample in a 250 ML wide mouth jar. Secure with a tag with the following information; Sampler Name, ROT #, Date and Time, Location, Contact Number, Flash Point, Specific Gravity, and Sediment & Water. Complete a Chain of Custody (COC) to accompany the sample. An example of a COC specific to tank T-304 is provided in **Enclosure 2.**
- The sample is collected by submerging a clear 1 liter sample jar in the tank using sounding tape, sample jar holder with cork stopper, and sample jar. Prior to submerging, the cork stopper is placed securely in the opening of the sample jar. The jar is then lowered to the bottom of the tank and then raised slightly (approximately 1 foot or more) off the bottom of the tank as to avoid collecting water. Using a jerking motion on the sounding tape handle, the cork is then removed from the sample jar and the jar is then raised at a moderate rate so as to get a representative sample.
- Or, take a sample with the 1 liter clear sample jar from the top 1/3 of the tank, then the middle 3<sup>rd</sup>, then the bottom 3<sup>rd</sup> of the tank. Combine all three samples into a bucket and mix. Transfer to a 250 ML wide mouth jar.

The sample is then checked visually for water. If none is present the sample is then sent off for analysis.

4. Samples with COCs are sent to M9 or directly to the Lab for analysis. Analytical results should be returned within five business days.
5. Once the analytical results comply with the required detection limits (as provided in **Enclosure 3**, the Environmental Protection Specialist must provide a written request to the subcontracted transporter and disposal facility to make arrangements for pickup. The Environmental Protection Specialist will provide the transporter and receiving facility with the approximate amount of used oil, in gallons, available for pickup.
6. The day prior to the first recovered oil truck arrives to pick up the first batch of oil the tank to be lifted will be de-watered a final time. Refer to step 2.
7. As a rule, the recovered oil trucks range in capacity from 5,000 to 7,250 gallons and it takes 25 to 30 minutes to fill a recovered oil truck.
8. The BOWTS operators will complete a U.S. Government Bill of Lading Form (provided in **Enclosure 4**. This U.S. Government Bill of Lading Form along with a Recycled Oil Shipment Certification Form and delivery receipt are bundled as a package for each delivery truck to keep while in transport. An example of this document package is provided in **Enclosure 5**. In general, 12 trucks are required to transport 100,000 gallons of oil off site. Consequently, 12 document packages must be prepared. A copy of this document package, the COC, and the analytical results are kept in the BOWTS facility operation files for three years.
9. It is recommended that the transporter pick up the recovered oil between sunrise and sunset. This minimizes the risk of spills occurring. Also, the risk that a spill could take place undetected due to insufficient sunlight is avoided.

10. The delivery trucks will pull up to the northeast side of tanks T-303 and T-304 next to the outlet ports in the drainage basin. The trucks will be equipped with male 3-inch cam locks to connect to the BOWTS facility outlet ports. A 5-gallon bucket is placed beneath the connection to catch any spillage. Should a spill occur, the spillage will fall into the bermed area and flow into the drainage basin. Operator records beginning flow meter reading on the Recovered oil lifting Report (OTH 103)  
**Enclosure 9.**
11. When the hose connection from the outlet port to the truck has been secured, the BOWTS Operator will enable pumps P-303 or P-304 from the control room in Building 3588. The Operator will then energize the pumps by placing the power switch to the HAND position, to begin transfer of recovered oil to the truck. When the truck has been filled to the acceptable capacity, the Operator will de-energize the pumps. The driver will check his truck for water using water detecting paste. The Driver and the Operator will note on the Oil Certificate that there is no water present on the truck before proceeding off site to its delivery destination. If water is present the tanker truck will need to be dewatered. Shut the outlet valve from the tank you are pumping from, blow down the lines to the tanker if possible or drain the line into the bucket at the strainer basket. The driver can now shut the valves on the tanker.
  - **Procedure for dewatering a single compartment rear loading tanker:**

Have the driver pull the tanker forward to where the connections on the tanker truck are just past the sump in the recovered oil offload area. Get a three inch hose from the bone yard and have the driver connect the hose to the tanker. Place the other end of the hose in the sump with the grate on top of it. Have the driver slowly open the valve on the tanker and drain the water. Shut the valve on the tanker and top off the tanker as needed with oil.
  - **Procedure for dewatering a side-loading multiple compartment tanker:**

Shut the valves from the tank you are pumping from and blow down the recovered oil hose into the tanker. Have the driver close the valves on the tanker truck. Get a three inch hose from the bone yard and have the driver connect the hose to the tanker. Place the other end of the hose in the sump with the grate on top of it. Have the driver slowly open the valve on the tanker and drain the water. Shut the valve on the tanker and top off the tanker as needed with oil.
12. Before the hoses are disconnected, the BOWTS Operator will record the ending flow meter reading on the Lifting Report and shut off the outlet port main valve and open the blowdown air valve to push all remaining liquid to the truck tank. When approximately ~10 seconds has elapsed, the air relief valve can be opened and the blowdown valve closed.
13. After the blowdown has been completed, the truck can disconnect its hoses from the BOWTS outlet port.
14. Repeat procedure Steps 9 through 12 for all subsequent trucks.
15. The facility Operator shall record the amount of recovered oil removed for each shipment in the operating log, the Lifting Report, (**Enclosure 9** (OTH-103) is the Recovered Oil Lift Report) and the total amount of recovered oil removed from the facility on the NAVSTA Waste Flow Log, in accordance with **Reference (a)**. A blank Waste Flow Log and example of a completed Waste Flow Log are provided in **Enclosures 6** and **7**, respectively.

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# Standard Operating Procedure IWOW-049

**TITLE: Procedure for Cleaning Basket Strainers at the Naval Base San Diego Bilge and Oily Waste Treatment System (BOWTS)**

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**References:** None.

**Enclosures:** (1) Site Map Showing Basket strainer locations (MAP-09)  
(2) Maintenance Request Form (OP-09)  
(3) Basket Strainer Manufacturer's Specifications (OTH-98)  
(4) PPE Requirements for Specific Operations/Tasks (OTH-01)

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## 1. PURPOSE

To provide operating procedures for the proper cleaning of oily debris collected by the basket strainers located at the Naval Base San Diego Bilge and Oily Waste Treatment System (BOWTS).

For operators not previously involved in this operation they shall, at a minimum, review the PPE requirements in **OTH-01**.

## 2. ACTION

All BOWTS Personnel

## 3. PROCEDURE

1. Background: Basket strainers are located in numerous locations at the Naval Station Bilge and Oily Waste Treatment System (BOWTS). **Enclosure 1** identifies the locations of the basket strainers at the BOWTS facility. Two types of basket strainers are used—small and large basket strainers. Small basket strainers are used when loading oily waste from a truck to BOWTS. Two small basket strainers are located at the two truck offloading lines by Receiving Basin T-101, and one small basket strainer is located at the inlet of the Recovered Oil Storage Tanks T-302, T-303, and T-304. Large basket strainers are used at the pumping stations, Receiving Basin, and Drainage Basin. The debris removed from these strainers shall be managed as a non-RCRA hazardous waste.
2. Inspecting and Cleaning Frequency: At a minimum, the basket strainers shall be inspected once each day. The small basket strainers shall be cleaned whenever there is visual evidence that the baskets are full and require cleaning, including shuddering of the pipes. The large basket strainers shall be cleaned approximately once a month by a subcontractor.
3. Prior to opening up the basket strainers, the Operator shall secure any upstream and downstream valves to minimize the backflow of wastewater from that point. Use of drip buckets is required each time the basket strainer is opened. These liquids in the drip buckets shall be placed in the overpack/salvage drum for subsequent discharge into one of the load equalization tanks.
4. Cleaning Basket Strainers: For the small basket strainers, the Operator shall wear rubber gloves and use a wire brush to clean the basket strainers. Cleaning shall be conducted immediately over the waste debris container and any debris that falls to the ground shall be picked up and containerized immediately. For the large basket strainer, a subcontractor will be responsible for cleaning and maintenance.

5. Closing Basket Strainers: Small basket strainer covers shall be tightened by hand and snugged to complete closure using a strap wrench and gentle tapping with a hammer. Over-tightening of the baskets can cause the handle to break or put undue stress on piping immediately adjacent to the strainer. Large basket strainers do not have covers but rather vault lids that shall be closed upon completion of cleaning.
6. Repair/Replacement Parts: In the event that any part of the basket strainer assembly requires repair or replacement, the Operator shall note this in the operating log. In addition, the Operator shall send a Maintenance Request through Maximo (see **Enclosure 2**). Specific replacement parts for small basket strainers can be identified by referring to manufacturer's specifications provided in **Enclosure 3**.

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# Standard Operating Procedures IWOW-050

## TITLE: Oily Waste & Industrial Waste Discharge Permit Self- Monitoring and Reporting Requirements

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**References:** (a) Industrial Users Discharge Permit (IUDP) Discharge Permit 08-0018  
(b) IWOW-009 "Overall Procedures for Batch Accumulation and Treatment"  
(c) IWOW-011, "How to Properly Characterize, Jar Test, Treat, and Discharge Full Tanks at the North Island Industrial Waste Treatment Plant (IWTP)"

**Enclosures:** (1) Non-Routine Batch Discharge Notification Requirements (OTH-75)  
(2) Sample Chain-of-Custody for Connection 120 (CoC 4 and 5)  
(3) Sample Chain-of-Custody for Connection 123 (COC 6)  
(4) Sample Chain-of-Custody for Connection 150 (CoC7)  
(5) Corrective/Preventative Action Request (OTH-91)  
(6) Waste Flow Log (**OP-04**)

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### 1. PURPOSE

To specify the information required to be reported on a monthly/quarterly basis to the Industrial Waste Water Program Manager for maintaining the Industrial Users Discharge Permit (IUDP) issued by the City of San Diego Industrial Wastewater Control Program (IWCP).

### 2. ACTION

All IWOW personnel

### 3. BACKGROUND

The Industrial Waste and Oily Waste Treatment Plants (IWOW) are part of an overall sewer discharge permit **Reference (a)** which is held by CNRSW. This permit includes several self-monitoring and reporting requirements. Currently there are three monitored points located at the NBCNI IWOW Plant, referred to as connection 120, 123, and 150.

### 4. PROCEDURE

1. Self-Monitoring is required on a monthly basis to demonstrate compliance with the specified sewer discharge limits for Connections 120, 123 and 150. The permit specifies that all discharges from connection 120, and 123, require a Non-Routine Discharge Notification (**Enclosure 1**) to be completed and submitted to the City of San Diego Lab Sampling Supervisor at least 48 hours prior to the discharge. At this time, a courtesy copy of **Enclosure 1** shall be faxed to the CNRSW Water Program Office at 619-524-6349. Also at this time, the EPS or designated personnel will inform the lab of the event and the need for a sampling technician. The chain-of-custody will be prepared prior to the discharge and submitted to the lab. Four hours prior to the designated discharge, the plant operators will begin to prepare for the discharge. Two samples are collected, a composite via an auto sampler, and a grab. A copy of the chain-of-custody is submitted to the CNRSW Industrial Waste Water Program Manger. Copies of these chain-of-custody forms are provided in **Enclosures (2)(3)(4)**.

Approximately 30 minutes prior to the start of the discharge, an operator or designee team will set up the 24-hour compositor at connection 120. Once the discharge begins, a grab sample will be collected from connection 120 and 123.

2a. Review of Self-Monitoring Analytical Results: Analytical results from the monthly self-monitoring are received typically within two weeks of the sampling event and are submitted to the Industrial Waste Water Program Manager directly from the laboratory, no later than the

3<sup>rd</sup> of each month. These results will also be filed in chronological order in the Building 788 Operator's Room.

- 2b. Self-Monitoring Violations: If the analytical results from this sampling event exceed any of the daily maximum or monthly average discharge limits, the sub contract laboratory will notify the project Manager or designee, and inform him of the violation issues. The IWOW Manager must immediately notify the CNRSW Water Program Office, and/or Media Manager for Water via phone call and email along with the Project Manager, and the DGR. Resampling of the connection, if it is possible, like in the case of a connection that, will occur at the earliest possible time, but no later than 15 days from the violation being reported to the City if it is a continuous discharge such as Connection 150 at NBCNI, or Connection 850 at NBSD. All discharge parameters for the connection will be resampled, not just the parameters in violation.

In addition, the IWOW Manager can also obtain results from the City of San Diego Lab Sampling Supervisor, to calculate the monthly average, for purposes of determining whether re-sampling is necessary.

In the event of a sewer discharge exceedance, the IWOW Manager shall immediately conduct an investigation using the Corrective Action Report (CAR) established through the ISO 14001 program to determine the real or potential cause of the excessive result. Within 5 days of the violation discovery, the IWOW Manager or designee shall provide the CAR with the results from this investigation to the CNRSW Water Program Office and the DGR. A copy of this report is provided in **Enclosure (7)** and is part of our Environmental Management System.

3. A monthly sample must also be collected at connection 150. This connection is considered a continuous discharge and therefore the sample can be collected at any time during the month with no notification necessary, but preferably during the first or second week. The sampler will set up the 24-hour compositor at connection 150 and collect a grab sample at the same time. A copy of the chain of custody will be provided to the CNRSW Water Program Office. A copy of this form is provided in **Enclosure (4)**.

This connection will follow the same requirements for Self-Monitoring Analytical Results and Self-Monitoring Violations as stated in 2a and 2b.

4. Monthly Gallons per Day: The third requirement is to report the average gallons per day discharge to the sewer. This requirement is completed on a monthly basis for connection 120, 123, and 150. This figure is determined by the algebraic result of subtracting the IWTP Surge Tank Discharge (meter) tank meter reading from the last day of the previous month from the first day of the current month and then dividing by the total number of days in the month. These figures are recorded weekly on The Waste Flow Log (**Enclosure 8**). These data will be compiled by the Environmental Protection Specialist or designee and will be submitted to the Utilities Engineering Technicians by the 3<sup>rd</sup> day of each month.
5. Highest daily discharge: Fourth requirement is to report the highest daily discharge for month for NBC and NBPL. Obtain from weekly waste flow log.

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# Standard Operating Procedure IWOW-051

## TITLE: Industrial Waste/Oily Waste Services Personnel Qualification and Training

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### References:

- (1) Title 22 California Code of Regulations 66264.16. Personnel Training
- (2) Title 8 California Code of Regulations 5192 Hazardous Waste Operations and Emergency Response.
- (3) Title 29 Code of Federal Regulations 1910.120 Hazardous Waste Operations and Emergency Response.
- (4) Title 49 Code of Federal Regulations 172 Subpart H Training

### Enclosures:

- (1) 3 Day On-The-Job Training Certificate (TR-17)
- (2) Annual Environmental, Health & Safety Refresher Training Record (TR-22)
- (3) Confirmation of Prior Receipt of Introductory Training (TR-15)
- (4) Daily Tailgate Safety Meeting PWS – San Diego Contract (TR-21)
- (5) Document Review Training Record (TR-10)
- (6) Individual Health & Safety Training and Document Review Record (TR-16)
- (7) Initial Health & Safety Training & Orientation Record (TR-14)
- (8) IWOW Training Matrix Verification Process (DRW-07)
- (9) Job Description – Environmental Protection Specialist (JD-10)
- (10) Job Description – Health & Safety Officer (JD-09)
- (11) Job Description – IWOW Manager (JD-01)
- (12) Job Description – Leak Detection Specialist (JD-05)
- (13) Job Description – Maintenance Mechanic (JD-03)
- (14) Job Description – Operator (JD-02)
- (15) Job Description – Project Chemist (JD-08)
- (16) Job Description – Project Manager (JD-07)
- (17) Job Description – Scheduler (JD-06)
- (18) Job Description- Operations Officer (JD-12)
- (19) Job Description – Site Supervisor/EPS (JD-13)
- (20) Job Description –Lead Operator (JD-14)
- (21) Qualification Card IWOW – BOWTS Operator (TR-02)
- (22) Qualification Card IWOW Manager (TR-01 )
- (23) Qualification Standard Leak Detection Specialist (TR-19)
- (24) Qualification Standard Maintenance Mechanic (TR-20)
- (25) Qualification Standard Operator – NAB (TR-06)
- (26) Qualification Standard Operator – NBCNI-IW (TR-04)
- (27) Qualification Standard Operator – NBCNI-OW (TR-05)
- (28) Qualification Standard Operator – NBPL (TR-08)
- (29) Qualification Standard Operator – NBSD (TR-07)
- (30) SOP Training Record (TR-09)
- (31) Training Matrix Record (TR-11)
- (32) Training Matrix Requirements (TR-03)

## 1. PURPOSE

The purpose of this procedure is to describe the Industrial Waste and Oily Waste (IWOW) Services Personnel Qualification and Training Program. The training was designed to assure that operations personnel have the knowledge and skills to safely and efficiently operate the facilities in compliance with regulations, the contract and permits. The training is also tied to the ISO 14001 Environmental Management System so Operators understand the aspects of operations impacting the environment and are encouraged to initiate improvements to equipment, systems and procedures to improve safety, operational efficiency and lessen adverse environmental impacts.

Through successful completion of initial training program, Under Instruction Personnel (UIP) will be competent to conduct operations in a safe and environmentally responsible manner. This SOP spells out the steps to become a Qualified Operator (QO), a Qualified Maintenance Mechanic and a Qualified Leak Detection Specialist.

## 2. BACKGROUND

There are two general categories of personnel working under the contract:

- Operations personnel who actually operate the facilities and actively manage waste. The Job Titles for this category are: IWOW Manager, Operations Officer, Site Lead Operator Site Supervisor /EPS, Operators, Maintenance Mechanic, and Leak Detection Specialist,
- Support Personnel who conduct administrative tasks and do not actively manage or handle waste. The Job Titles for this category include: Project Manager, Project Chemist, Scheduler, Environmental Protection Specialist and Site Safety and Health Officer. There are other administrative personnel but they are involved in administrative activities and do not handle waste nor make decisions regarding waste management and handling.

This procedure provides a comprehensive and systematic approach that will enable the IWOW Manager and staff to know the extent of individual operator qualifications and training relative to routine and non-routine tasks. This procedure describes tools that will be used by team members in order to provide documented evidence to the Navy and inspectors that IWOW staff members are qualified and trained to perform routine or non-routine tasks. This procedure was specifically designed to comply with the following training requirements:

- 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response
- 29 CFR 1910.1200 Hazard Communication
- 22 CCR 66264.15 and §66265.16 Personnel Training (TSDF & Interim Status Generator)
- 49 CFR 172 Subpart H, Training
- NAVFAC Southwest Environmental Services Contract (ES) (and any successor contracts).

Additional training will be provided in accordance with company policies and as required by other regulations.

## 3. SCOPE

The IWOW Personnel Qualification and Training Program applies to all operations personnel who manage, supervise, and perform services described in NAVFAC SW Environmental Services Contract, including subsequent contract modifications for the duration of this contract.

## 4. ACTION

The IWOW Manager is responsible for implementing this procedure for personnel under their charge (i.e., Operators, Maintenance Mechanics, Leak Detection Specialist Project Chemist, Scheduler and General Laborer). The Site Safety and Health Officer will assure that support personnel who do not report to the IWOW Manager have the safety and health training required for work related to the Project.

## 5. IWOW JOB TITLE AND POSITION DESCRIPTIONS

Operations personnel:

- **IWOW Manager** – Job Description **JD-01** details the job description for the IWOW Manager. The IWOW Manager is responsible for managing operations and implementing activities related to the IWOW as detailed in the contract.
- **Operation Officer** – Job Description JD-12 details the job description for the Operations Officer. The Operations Officer is responsible for industrial waste tank treatments, waste profiling, sampling, the project maintenance program, and supervision of NBSD/NBPL Site Supervisor/EPS, the NBCNI Lead Operator, and the Scheduler in support of overall operation of the IWOW facilities.
- **Site Supervisor/EPS** – Job Description JD-13 details the job description for the Site Supervisor at NBSD and NBPL. The Site Supervisor is responsible for the waste acceptance/treatment processes, maintenance, regulatory compliance, and supervision of plant Operators at two Bilge and Oily Waste Treatment Plants (BOWTS).
- **Lead Operator**-Job Description JD-14 details the job description for the Lead Operator at NBC and NAB. The Plant Lead is responsible for waste acceptance/treatment processes, maintenance, and supervision of Plant Operators at two Bilge Oily Waste Treatment Plants and the Industrial Waste Treatment Plant.
- **Operator** – Job Description **JD-02** details the general job description for Operators. Specific job functions are included in Operational SOPs and other project documents listed in enclosures to this procedure.
  - **Qualified Operator (QO)** – has completed the training and passed test(s) and oral boards for the base
  - **Under Instruction Personnel (UIP)** – An operator new to a post and is in the process of gaining the knowledge and skills to become a QO.
- **Maintenance Mechanic (MM)** – Job Description **JD-03** details the general job description for Maintenance Mechanic. Specific job functions are included in Operational SOPs and other project documents listed in enclosures to this procedure.
- **Leak Detection Specialist (LDS)** – Job Description **JD-05** details the general job description for the Leak Detection Specialist. The LDS constructs components, subunits, or simple models, or adapts standard and site-specific leak detection equipment. He/she may troubleshoot and correct malfunctions, maintenance conditions, and leak report events. The LDS follows specific layout and scientific diagrams to construct and package simple devices and subunits of equipment.

Support personnel:

- **Project Manager (PM)** – Job Description **JD-07** details the general job description for the Project Manager. The PM is responsible for overall compliance with and implementation of the contract.
- **Project Chemist (PC)** – Job Description **JD-08** details the general job description for the Project Chemist. The PC will design treatment recipes, conduct sampling, maintain profiles and implement the Waste Analysis Plan
- **Scheduler** – Job Description **JD-06** details the general job description of the Scheduler. The Scheduler prepares, compiles, coordinates, and records logistic and production data, and develops records and reports on the procurement of material, quality control, and other aspects of production.

- **Site Safety and Health Officer (SSHO)** – Job Description **JD-09** details the general job description for the Health & Safety Officer. The SSHO provides support for operations conducting safety audits, training and assisting in determining how activities can be completed safely. The SSHO works with the IWOW Manager to administer and coordinate the Training Program for IWOW Services personnel. He/she maintains training records for all IWOW Services personnel and facilitates the renewal or acquisition of necessary personnel certifications.
- **Environmental Protection Specialist (EPS)** – Job Description **JD-10** details the general job description for Environmental Protection Specialist. The EPS works with the IWOW Manager to assist in compliance with environmental regulations and permits. He/she conducts facility audits, prepares reports and other compliance documents, and performs other duties related to the operation of the IWOW facilities.

## 6. ACRONYMS AND ABBREVIATIONS

|   |   |
|---|---|
| EPS - Environmental Protection Specialist | PC – Project Chemist                            |
| GDA – Government Designated Authority     | PWS - Performance Work Statement (the Contract) |
| SSHO – Site Safety & Health Officer       | QC – Qualified Operator                         |
| IWOW - Industrial Waste and Oily Waste    | Qual Card - Qualification Card                  |
| IWTP - Industrial Waste Treatment Plant   |   |
| LDS - Leak Detection Specialist           | SOP - Standard Operating Procedure              |
| MM - Maintenance Mechanic                 | UIP – Under Instruction Personnel               |

## 7. PROCEDURE

The training program is broken down into 3 basic categories: 1) Initial Orientation, 2) Job Title specific training (Operations Qualification Training and support activities training), and 3) Ongoing and Refresher Training. The path to completion of the minimum training requirements shown in the **Training Matrix Requirements (TR-03)**, a table showing the Job Titles and the minimum training requirements, is described in this section of the SOP. It is important to note that some training is listed on the table but it is not required to be completed until the regulatory specified time frame for the particular task or Job. As an example, HAZWOPER training must be completed BEFORE assignment handling hazardous waste subject to the requirements where as RCRA facility training is to be completed within 6 months of assignment to a task/job.

Support personnel positions do not involve direct contact with hazardous waste or operation of the waste management units. Support positions will be filled with personnel whose background and previous training qualify them to conduct the activities of that position. In other words, they come into the position with the skill set to complete the job and need only minimal coaching and training to complete their job duties. As such, Support personnel will receive the initial orientation and regulatory required training (e.g., 24 Hour HAZWOPER if they will work with the containment areas) but the function specific training is not formalized in the procedure.

Operations personnel will directly manage the hazardous waste and operate the systems to treat, store and dispose of the wastes. All operations personnel will have Initial Orientation training and then function specific training based on their Job Title - IWOW Manger, Operator, MM, or LDS. Similar to Support personnel, the IWOW Manager, MM and LDS job functions are primarily support in nature, they are not directly handling hazardous waste but managing or maintaining equipment in support of operations. Personnel filling these positions will be selected based on their background and experience pertaining to the job.

### 7.1 Initial Orientation

When an employee is assigned to work on the Environmental Services Project, they are to receive orientation training to give them general safety and emergency information regarding the

company safety procedures and policies and project specific information. The Initial Orientation will be documented on the **Initial Health & Safety Training & Orientation Record (TR-14)** and **Confirmation of Prior Receipt of Introductory Training (TR-15)**. This orientation training is to include at a minimum the following information:

- Company Safety orientation requirements
- Confirm 24/40 Hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training, if applicable
- Hazard Communication Program
- Environmental Policy/ISO 14001 Orientation
- Explanation of Job Duties (Job Description, Letter of Designation as applicable)
- Site Accident Prevention Plans (NBCNI, NBSD, NAB, NBPL)
  - Site Health & Safety Plan
  - Contingency/Emergency Response Plans & Responsibilities
  - Facility Hazardous Material Business Plans

## 7.2 Qualification Training

EPA/Cal-EPA regulations state:

“Facility personnel shall successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of [hazardous waste facility regulations].”

The training **MUST** be completed within 6 months of assignment to the facility or position. The goal of this training program is to have operators qualified for a post within 90 days. During the qualification training period the operator will be designated as “Under Instruction Personnel” (UIP). Once the UIP has successfully completed qualification, they will be designated as a “Qualified Operator” (QO). Similarly, Leak Detection Specialists and Maintenance Mechanics will have a Qualification Standard but if they are selected internally from the Operators, their qualification time frame may be for an extended period of time but they will not work on a task alone until qualified for that task

### 7.2.1 Operator Qualification

The Operator Qualification Card, form **TR-02**, is broken into 5 sections\

- All Base requirements (includes 24 hour On-The-Job Training),
- NAB Qualification,
- NBCNI Qualification,
- NBSD Qualification, and
- NBPL Qualification.

Each Posting Qualification includes (Note: North Island has 2 postings: industrial waste treatment and oily waste treatment):

- A) Standard Operating Procedures (**TR-09**)
- B) Accident Prevention Plans
  - a. Site Safety & Health Plan (**TR-14**)
  - b. Contingency Plan/ or Business Plan (**TR-14**)
- C) Operator Qualification Standard (**TR-04, -05, -06, -07, -08**)
- D) Facility Map
- E) Written Test (NBCNI IW/OW & NAB on a combined test)
- F) Oral Board – NOTE: Prior to the conducting the Oral Board, ALL of the other qualification documentation **MUST** be complete.

Each of these qualification items is further detailed below.

After the initial orientation, UIPs will work under the supervision of QOs until they have successfully passed the Qualification requirements. During the qualification period, UIPs will read SOPs for a post and receive instruction from QOs. The IWOW Manager or designee (typically the Lead Operator for a post) will periodically check the UIP's progress. Areas of weakness should be identified and additional training and instruction in those areas is to be given. Within 90 days of assignment, the UIP should have completed review of the SOPs, had the Operator Qualification Standard completely signed off, drawn the facility map and be prepared for the Written Test and the Oral Boards. The Training Coordinator will review the qualification documentation for completeness - The Oral Board is not to be scheduled until ALL required documentation is complete and is in the training file! In the event the UIP does not pass the Written Test or the Oral Board, the UIP and the IWOW Manager or designee are to develop a training plan to address the identified deficiencies. The UIP is to complete remedial training within 30 days and retake the test or Oral Board. If the UIP does not pass the written test or Board at the end of the 1<sup>st</sup> 30-day remedial training period, a training plan to address the weaknesses will be developed by the IWOW Manager or designee. Before the end of the 2<sup>nd</sup> 30-day remedial training period the UIP must retake the test or Board. If they do not pass the test or Board at this point, the IWOW Manager in consultation with other company management will make a determination whether the UIP will be given an additional remedial training period or be removed from consideration to be an operator. If the UIP is given a 3<sup>rd</sup> 30-day remedial training period they must successfully complete the remedial training and pass the test and Board. If they do not pass, they will be removed from consideration to be an operator because the 6 month qualification period specified in EPA regulations will expire.

- A) **Standard Operating Procedures (TR-09)**  
UIPs will review SOPs and sign off the appropriate line on **SOP Training Record (TR-09)**. If they have any questions regarding the instructions and information, they are to contact a QO or supervisory personnel to get clarification. The SOPs are categorized on TR-09 for general "All Base Requirements" and each individual base.
  
- B) **Accident Prevention Plans**  
Accident Prevention Plans have been prepared for each base in accordance with US Army Corps of Engineers Health & Safety Manual, EM385-1-1. UIPs will review and sign off on the APP and APP components.
  - a. **Site Safety & Health Plans (TR-14)**  
Site Safety & Health Plans review are included in the **Initial Health and Safety Training and Orientation Record (TR-14)**. UIP are to read these Plans and if they have any questions regarding the instructions and information, they are to contact supervisory personnel, an EPS or the SSHO to get clarification.
  - b. **Contingency Plan/ or Business Plan (TR-14)**  
The Contingency Plan and Business Plans review are included in the **Initial Health and Safety Training and Orientation Record (TR-14)**. UIP are to read these Plans and if they have any questions regarding the instructions and information, they are to contact supervisory personnel, an EPS or the SSHO to get clarification.
  
- C) **Operator Qualification Standard (TR-04, -05, -06, -07, -08)**  
Each posting has an Operator Qualification Standard (OQS) designed to assure that the UIP is understands and demonstrates the skills necessary to complete a task. . Under Instruction Personnel are to review relevant SOPs for an operation and be trained under the supervision of a Qualified Operator (QO) to gain the necessary knowledge and skills to complete tasks. A QO is to instruct the UIP how to complete the task item and when satisfied the UIP has the knowledge to complete the operation properly, the QO is to sign off on the task item. Once the UIP feels competent to conduct the operation without direct supervision of a QO, they are to sign and date the UIP sign off location. Once A UIP has signed off they are to contact the Lead for his/her approval. If the lead, through

direct observation and/or verbal questioning, feels the UIP is competent to complete the task unsupervised, the Lead will sign and date the item. Once the UIP has all the tasks signed off they will be eligible for taking the oral boards. The UIP is responsible to keep the OQS form and track his/her progress toward full qualification.

D) Facility Map

UIPs are to learn and understand the facility layouts and how wastes are conveyed to the treatment plants. To achieve this, the UIP will hand draw a map of each facility and important features. The map is to include: pipelines, pump/lift stations, storage and treatment tanks, treatment units, containment areas, leak detection systems and emergency cut offs.

E) Written Test

After the UIP has successfully completed the OQS for a posting, they will be given a written test for the posting. The test will be designed to test the UIP's knowledge of the facility and the operations of the post. A suite of true/false, multiple choice and essay type questions that may be included on the test will be developed by supervisory personnel. The IWOW manager or designee will select a sufficient number of questions to determine competency and administer the written test. The Lead Operator and or the IWOW Manager or their designee will grade the test. As a general guideline, 80% correct will constitute a passing grade, however, the degree of difficulty and quality of answers may affect the passing grade.

F) Oral Board

The final step in becoming a QO will be the Oral Board for a post. The Lead operator, and/or IWOW Management obtain the UIP's training file and confirm the qualification requirements are complete before scheduling the Oral Board. In the Oral Board, questions will be posted regarding operations for the post and "What if" situations to test the UIP's knowledge about the facility and operations. The IWOW Manager or designee will develop a suite of questions and situations to be addressed at the oral board. The Facility Map drawn by the UIP will also be used as a reference in the Board. Additional personnel may sit in on the Oral Board including the Project Chemist, the Environmental Protection Specialist and the Health and Safety Officer. The personnel sitting in on the board will make recommendations to the IWOW Manager whether to pass the UIP but the ultimate decision to "Qualify" the Operator rests with the IWOW Manager.

G) California Water Environment Association Certification

After becoming a Qualified Operator at all 4 bases, Operators are to obtain minimum of Grade 1 Industrial Waste Treatment Plant Operator certification from the California Water Environment Association (CWEA). Four base qualified operators are required to take the examination in the next qualifying quarter (i.e., Operators are to complete and submit the application prior to the next application deadline and sit for the examination in the next quarter.) Certification is a contract requirement and Operators must continue to take the examination in the next quarter they are eligible until the certification is obtained. For certification information and application deadlines, visit the CWEA website at [www.CWEA.org](http://www.CWEA.org).

## 7.2.2 Leak Detection Specialist Qualification

The Leak Detection Specialist (LDS) Qualification is documented on the Operator Qualification Card **TR-02**, and includes 2 sections:

- All Base requirements (includes 24 hour On-The-Job Training), and
- Leak Detection Specialist.

Qualification for the LDS entails:

- A) All Base Standard Operating Procedures (TR-09)
- B) Accident Prevention Plans (TR-14)
  - a. Site Safety & Health Plan (TR-14)
  - b. Contingency Plan/ or Business Plan (TR-14)
- C) Leak Detection Specialist Qualification Standard (TR-23)

After the initial orientation, LDS trainees will work under the supervision of a qualified LDS (or equivalent (i.e., Lead, manufacturer rep) until they have successfully passed the Qualification requirements. During the qualification period, LDS trainees will read SOPs for the position and receive instruction from Qualified LDSs. The IWOW Manager or designee will periodically check the LDS trainee's progress. Areas of weakness should be identified and additional training and instruction in those areas is to be given. Within 90 days of assignment, the LDS trainee should have completed review of pertinent documents and had the LDS Qualification Standard completely signed off. In the event the LDS trainee is not qualified as determined by the IWOW Manager, the LDS trainee and the IWOW Manager or designee are to develop a training plan to address the identified deficiencies. The LDS trainee is to complete remedial training within 30 days. If the UIP still is not qualified in the opinion of the IWOW Manager, a training plan to address the weaknesses will be developed by the IWOW Manager or designee. Before the end of the 2<sup>nd</sup> 30-day remedial training period the LDS trainee must show understanding and qualification to the satisfaction of the IWOW Manager. If the trainee is not qualified at this point, the IWOW Manager in consultation with other company management will make a determination whether the LDS trainee will be given an additional remedial training period or be removed from consideration to be a LDS. If the LDS trainee is given a 3<sup>rd</sup> 30-day remedial training period they must successfully complete the remedial training and show qualification to the satisfaction of the IWOW Manager. If they do not pass, they will be removed from consideration to be a LDS because the 6 month qualification period specified in EPA regulations will expire.

- A) All Base Standard Operating Procedures (TR-09)

LDS Trainees will review All Base SOPs and sign off the appropriate line on **SOP Training Record (TR-09)**. If they have any questions regarding the instructions and information, they are to contact a Qualified LDS or supervisory personnel to get clarification. The SOPs are categorized on TR-09 for general "All Base Requirements" and each individual base.
- B) Accident Prevention Plans (TR-14)

Accident Prevention Plans have been prepared for each base in accordance with US Army Corps of Engineers Health & Safety Manual, EM385-1-1. UIPs will review and sign off on the APP and APP components.

  - a. Site Safety & Health Plans (TR-14)

Site Safety & Health Plans review are included in the **Initial Health and Safety Training and Orientation Record (TR-14)**. UIP are to read these Plans and if they have any questions regarding the instructions and information, they are to contact supervisory personnel, an EPS or the SSHO to get clarification.
  - b. Contingency Plan/ or Business Plan (TR-14)

The Contingency Plan and Business Plans review are included in the **Initial Health and Safety Training and Orientation Record (TR-14)**. LDS Trainees are to read these Plans and if they have any questions regarding the instructions and information, they are to contact supervisory personnel, an EPS or the SSHO to get clarification.
- C) Leak Detection Specialist Qualification Standard (TR-23)

The LDS Qualification Standard (LDSQS) is designed to assure that the LDS Trainee understands and demonstrates the skills necessary to complete a task. The LDS Trainee

will work with a Qualified person to learn how to conduct tasks. Once the LDS Trainee is comfortable with a task and a Qualified person believes the LDS Trainee is ready, the LDS Trainee will demonstrate the task without guidance or coaching under the observation of a Qualified person. Provided the Qualified person is satisfied with the demonstration of skill/knowledge, they will sign the LDS Trainee's LDSQS for that skill. The LDS Trainee is responsible to keep the LDSQS form and track his/her progress toward full qualification.

### 7.2.3 Maintenance Mechanic Qualification

The Maintenance Mechanic (MM) Qualification is documented on the Operator Qualification Card **TR-02**, and includes 2 sections:

- All Base requirements (includes 24 hour On-The-Job Training), and
- Maintenance Mechanic.

Qualification for the MM entails:

- A) All Base Standard Operating Procedures (**TR-09**)
- B) Accident Prevention Plans (**TR-14**)
  - a. Site Safety & Health Plan (**TR-14**)
  - b. Contingency Plan/ or Business Plan (**TR-14**)
- C) Contingency Plan/ or Business Plan (**TR-14**)
- D) Maintenance Mechanic Qualification Standard (**TR-24**)

After the initial orientation, MM trainees will work under the supervision of a qualified MM (or equivalent (i.e., Lead, manufacturer rep) until they have successfully passed the Qualification requirements. During the qualification period, MM trainees will read SOPs for the position and receive instruction from Qualified MMs. The IWOW Manager or designee will periodically check the MM trainee's progress. Areas of weakness should be identified and additional training and instruction in those areas is to be given. Within 90 days of assignment, the MM trainee should have completed review of pertinent documents and had the MM Qualification Standard completely signed off. In the event the LDS trainee is not qualified as determined by the IWOW Manager, the MM trainee and the IWOW Manager or designee are to develop a training plan to address the identified deficiencies. The MM trainee is to complete remedial training within 30 days. If the UIP is still not qualified in the opinion of the IWOW Manager at the end of the 1<sup>st</sup> 30-day remedial training period, a training plan to address the weaknesses will be developed by the IWOW Manager or designee. Before the end of the 2<sup>nd</sup> 30-day remedial training period the MM trainee must demonstrate understanding and qualification to the satisfaction of the IWOW Manger. If they do not pass the test or Board at this point, the IWOW Manager in consultation with other company management will make a determination whether the MM trainee will be given an additional remedial training period or be removed from consideration to be a MM. If the MM trainee is given a 3<sup>rd</sup> 30-day remedial training period they must successfully complete the remedial training and demonstrate understanding and qualification to the satisfaction of the IWOW Manger. If they do not, they will be removed from consideration to be a MM because the 6 month qualification period specified in EPA regulations will expire.

- A) All Base Standard Operating Procedures (**TR-09**)

MM Trainees will review All Base SOPs and sign off the appropriate line on **SOP Training Record (TR-09)**. If they have any questions regarding the instructions and information, they are to contact a Qualified MM or supervisory personnel to get clarification. The SOPs are categorized on TR-09 for general "All Base Requirements" and each individual base.
- B) Accident Prevention Plans (**TR-14**)

Accident Prevention Plans have been prepared for each base in accordance with US Army Corps of Engineers Health & Safety Manual, EM385-1-1. UIPs will review and sign off on the APP and APP components.

a. Site Safety & Health Plans (TR-14)

Site Safety & Health Plans review are included in the **Initial Health and Safety Training and Orientation Record (TR-14)**. UIP are to read these Plans and if they have any questions regarding the instructions and information, they are to contact supervisory personnel, an EPS or the SSHO to get clarification.

b. Contingency Plan/ or Business Plan (TR-14)

The Contingency Plan and Business Plans review are included in the **Initial Health and Safety Training and Orientation Record (TR-14)**. MM Trainees are to read these Plans and if they have any questions regarding the instructions and information, they are to contact supervisory personnel, an EPS or the SSHO to get clarification.

C) Maintenance Mechanic Qualification Standard (TR-24)

The MM Qualification Standard (MMQS) is designed to assure that the MM Trainee understands and demonstrates the skills necessary to complete a task. The MM Trainee will work with a Qualified person to learn how to conduct tasks. Once the MM Trainee is comfortable with a task and a Qualified person believes the MM Trainee is ready, the MM Trainee will demonstrate the task without guidance or coaching under the observation of a Qualified person. Provided the Qualified person is satisfied with the demonstration of skill/knowledge, they will sign the MM Trainee's MMQS for that skill. The MM Trainee is responsible to keep the MMQS form and track his/her progress toward full qualification.

### 7.3 Periodic Training

Periodic training includes both specified schedule refresher training (e.g., annual refresher) and unspecified schedule training for updates or changes to prior training (e.g., revision to SOP, identification of training deficiency).

#### 7.3.1 Specified Schedule Training

Specified schedule training is generally driven by regulatory mandates. DOT training safety and function specific training is to be repeated every 3 years. Pursuant to both EPA and OSHA regulations, personnel handling hazardous waste are required to have annual refresher training. At the project level, the company has also established annual training that includes the items listed on the **Annual Environmental, Health & Safety Refresher Training Record (TR-22)**.

- o Annual refresher training
  - OSHA: 8 Hour Hazardous Waste Operations and Emergency Response (HAZWOPER), 29-CFR 1910.120(e)
  - EPA: TSDF Operations training including operation, maintenance and repair of facility systems and emergency response, 22 CCR 66264.16(c) & 40 CFR 264.16(c)
  - Storm Water Pollution and Prevention Program (SWPPP, Best Management Practices
  - Company designated Plans, Programs and procedures as listed in the **Annual Environmental, Health & Safety Refresher Training Record (TR-22)**.

#### 7.3.2 Unspecified Schedule Training

Unspecified schedule training will be provided when new training needs are identified, such as new or revised Programs, Plans and procedures, or deficiencies are identified in implementation of previous training. Training is to be provided prior to implementation of the new/revised Programs, Plans, SOPs or the operation where the training deficiency was identified.

In general, training for revised Programs, Plans and SOPs will be provided within 10 days of the effective date of a revised or modified SOPs, Plans or Programs. If the training is not provided within 10 days, personnel are to receive training on the revisions prior to implementing the modified SOP, Plan or Program. This training may take the form of group training sessions, one-on-one training or issuance of revised documentation for review. The training will be documented on the Document Review Training Record (**TR-10**), the Individual Health & Safety Training and Document Review Record (**TR-16**), or similar documentation method (e.g., sign-off on a memo describing the new/revised activity)

**NOTE:** Editorial and other changes which do not effect the actual implementation of a procedure or plan will not necessitate providing training. However, any change which effects how operations conducts business (e.g., change to an operation checklist, new inspection documentation specification) will require training prior to implementation of the change.

#### 7.4 Other Training

In addition to the training noted above, before conducting certain tasks personnel are required to receive training so they can complete the task safely and in compliance with regulations. This Training may include, but not limited to, the following:

- Department of Transportation – 49 CFR 172 Subpart H (required before signing shipping papers/manifest or preparing waste packaging for shipment)
- Respiratory Protection Program
  - General Respiratory Protection program training (often include in HAZWOPER)
  - Respirator usage and fit-testing – Air Purifying and/or Supplied Air Respirators
- Permit Required Confined Space (PRCS) Program – required before participating in PRCS entries
  - Entrant and Attendant training
  - PRCS Supervisor training
  - Entry Rescue drill training – vertical and horizontal
- Control of Hazardous Energy and Hazardous Material Sources (Project Energy Elimination and Control Program - Lockout/Tagout)
- Hearing Conservation, if applicable
- Accident Prevention and Reporting

An Operator or MM with demonstrated experience and competence at the facility is qualified to train others to become Operators or MMs. Former Navy PWC IWOW staff will be credited with the qualification and training that was recognized by the Navy prior to April 1, 2005. A Qual Card will be completed for each individual reflecting training received and experience gained prior to that date.

### 8. RESPONSIBILITIES

The following responsibilities support the **IWOW Training Matrix Verification Process (DRW-07)**.

#### 8.1 Project Manager

The Project Manager shall identify and approve the hiring of qualified operators with expertise in IWOW Operations, and issue a Qual Card for the IWOW Manager. The Qual Card specifies contract training requirements that need to be accomplished and documented. The Qual Card shall be maintained in secured personnel training files in the company NBCNI Project Office. The Project Manager has the following responsibilities:

- Assumes overall responsibility for the Training Program
- Identifies, coordinates, performs, and documents IWOW Manager training

- Instructs the IWOW Manager on the Training Program responsibilities, as described in this SOP
- Appoints a Site Safety and Health Officer who will assist the IWOW Manager in implementation of this training SOP.
- Periodically reviews the **Training Matrix Requirements (TR-03)** to assess the Training Program status
- Provides corrective action support to the IWOW Manager and SSHO.

## 8.2 IWOW Manager

The IWOW Manager has the following responsibilities:

- Ensures that individuals understand and effectively implement their Training Program responsibilities, as described in this SOP
- Ensures that individuals complete training requirements for access rights to certain base locations, when required
- Determines qualification and training requirements for IWOW Operators, MMs, LDSs, Project Chemist Scheduler and General Laborer.
- Reviews the Training Matrix Record and Qual Cards to verify individual qualification and training status
- Requests administrative support from the SSHO (e.g., to schedule class training for specific individuals)
- Provides individuals with trained supervision, when necessary

At a minimum, the IWOW Manager shall review the following documents and sign a **Document Review Training Record (TR-10)** upon completion of the document review:

- Annex 16 Wastewater of the NAVFAC SW Environmental Services Contract N625473-10D-4009.
- The Treatment and Storage Facility Permit issued to the NBCNI Hazardous Waste Facility (EPA ID CA7170090016 and the associated Part B Application (and successor permits/applications)
- Permits that apply to IWOW operations. These are identified by the Environmental Protection Specialist

### 8.2.1 Customer Training

The IWOW Manager or designee shall provide training to vessel and shore commands as necessary to ensure compliance with applicable regulations and SOPs. The IWOW Manager shall complete a training plan for vessel and shore commands based on Navy DGA input. The IWOW Manager shall perform and/or coordinate document the training on a **Document Review Training Record (TR-10)** or a similar form that will contain the date, the trainer's name, the names or identification of trainees, and the topics covered. Customer training records shall be maintained with company training records at the company Project Office.

### 8.2.2 IWOW Operators, Maintenance Mechanics, and Leak Detection Specialists Qual Cards

The IWOW Manager or designee shall issue a Qual Card for each IWOW Operator, MM, and LDS. A copy of the Qual Card shall be maintained in personnel training files in the NBCNI Project Office. See Section 8.3 for IWOW Operator responsibilities.

### 8.2.3 Training Records

The IWOW Manager will be responsible for addressing training inquiries made by the Navy Contracts Manager and Regulatory Agency Inspectors. The IWOW Manager or designee shall provide access to individual training records at the company Project Office upon request by the GDA or regulatory agency staff performing the on-site inspections.

### 8.3 IWOW Operators, Maintenance Mechanics, and Leak Detection Specialists

Operators, MMs and LDSs will be responsible to track their progress toward qualification for each posting. They will be issued a training package that includes the training and Qualification forms to be completed for their qualification. They will be responsible for coordinating and completing:

- **Initial Health & Safety Training & Orientation Record (TR-14)**
- **Confirmation of Prior Receipt of Introductory Training (TR-15)**
- **SOP Training Record (TR-09)**
- **Operator Qualification Standards – NBCNI-IW (TR-04), NBCNI-OW (TR-05), NAB (TR-06), NBSD (TR-07), NBPL (TR-08), or Qualification Standard Leak Detection Specialist (TR-19), or Qualification Standard Maintenance Mechanic (TR-20), as applicable**
- **Annual Environmental, Health & Safety Refresher Training Record (TR-22)**
- **Daily Tailgate Safety Meeting PWS – San Diego Contract (TR-21)**
- And any additional training as determined by the IWOW Manager.

NOTE: Training/Qualification for all topics/SOPs listed in the Training Matrix Requirements need not be completed prior to working in the IWOW facility. Personnel are authorized to conduct operations only for those topics/SOPs that they have reviewed or have been qualified/trained for. Some operators may not work at certain bases or with certain SOPs and need not be “qualified” for operations they do not conduct.

#### **Qualifications for Operators Who Operate Commercial Vehicles**

Project staff who operate commercial vehicles shall meet the following requirements:

- DOT 49 CFR 172.700, Subpart H, Training Requirements
- Complete documentation for the Driver Qualification file
- Qualify for and have a Medical Examiner's Certificate for Commercial Driver's License (DOT Medical Card)

Project staff who transport hazardous materials subject to DOT shipping regulations (i.e., drivers transporting hazardous material on public thoroughfares) shall meet the following requirements:

- Commercial Driver's License with Hazardous Material Endorsement

### 8.4 Site Safety & Health Officer

The Site Safety & Health Officer (SSHO) has the following responsibilities:

- Acts as the training coordinator, unless someone else is specifically assigned the responsibility
  - Reviews qualification documents for completeness prior to scheduling the Oral Board.
- Initiates a Training Folder for each individual
- Updates and maintains Qual Cards, Training Records, Training Folders, and the Training Matrix Record
- Provides administrative support to the IWOW Manager as requested (e.g., for scheduling of training courses)

### 8.5 All IWOW Treatment Plant Personnel

Each individual who performs or supports IWOW operations has the following responsibilities:

- Assumes personal responsibility for informing supervisors if they are assigned a task or function for which they have NOT received training or do not possess the necessary knowledge to perform safely and properly
- Routinely reviews the Training Matrix to maintain continual awareness of personal qualification and training status

- Recommends Training Matrix modification to responsible lead operator or manager based on perceived qualification and training needs

## 9. TRAINING FILES AND RECORDS MANAGEMENT

Individual training files and documentation, such as SOP Training Records, Operator Qualification Standards, Document Review Training Records, and Training Certificates, shall be maintained at the NBCNI project office.

Table 1 describes the training records retention responsibilities on this project.

**Table 1**  
**Table of Training Records**

| <b>Record Type</b>                | <b>Record Form</b> | <b>Transmittal to Training Coordinator</b> |
|-----------------------------------|--------------------|--|
| IWOW Manager Qual Card            | Hard copy          | Project Manager                            |
| Operator, MM, LDS & BA Qual Cards | Hard copy          | IWOW Manager/Training Coordinator          |
| Document Review Training Records  | Hard copy          | Training Coordinator                       |
| SOP Training Records              | Hard copy          | Training Coordinator                       |
| Operator Qualification Standards  | Hard copy          | Training Coordinator                       |
| Training Certificates             | Hard copy          | Training Coordinator                       |
| Training Matrix Requirements      | Electronic         | Training Coordinator                       |
| Training Matrix Record            | Electronic         | Training Coordinator                       |

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# STANDARD OPERATING PROCEDURE IWOW-052

**TITLE: Sump Management at the Naval Base San Diego Bilge and Oily Waste Treatment System (BOWTS)**

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**Reference:** (a) California Code of Regulations, Title 22, Chapters 15, Article 10  
(b) California Health and Safety Code, Chapter 6.5, Sections 25201, et seq.

**Enclosures:** (1) PPE Requirements for Specific Operations/Tasks (OTH-01)

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## 1. PURPOSE

The purpose of this procedure is to identify the allowable uses of the concrete sump located on the inside of the truck offloading area at the Naval Base San Diego Bilge and Oily Waste Treatment System (BOWTS).

For operators not previously involved in this operation they shall, at a minimum, review the PPE requirements in **OTH-01**.

## 2. ACTION

Operator personnel

## 3. PROCEDURE

1. **References (a) and (b)** define containers, tanks, and sumps used at facilities that generate, treat, store, or handle hazardous wastes. The intent of these laws and regulations is to ensure that hazardous waste facilities are designed and operated in a manner that minimizes releases of hazardous constituents to the environment.
2. The BOWTS facility has numerous sumps. Examples of sump locations are as follows: at the pump stations, at the Load Equalization Tank (LET) basin, at the two Recovered Oil Tank (ROT) basins, and at the bermed areas. The primary purpose of these sumps is to collect rainwater and incidental spillage, and provide a means of preventing off-site releases of hazardous constituents handled within the facility. Some sumps are equipped with a small pump that automatically transfers accumulated liquids into the Drainage Basin. Most sumps are not equipped with a small pump but they do drain to the Drainage Basin. Liquids (puddles of standing water) accumulated in the sumps, which do not drain to the Drainage Basin are collected into a 55-gallon drum with a portable sump pump. These liquids are then transferred into the Drainage Basin for processing.
3. Only non-routine events that cannot otherwise be captured using buckets is allowed to be directed to the sump. If this activity occurs, the contents of the sump must be pumped into the Drainage Basin immediately. If the sump pump is not working or is incapable of handling the cleanup water generated, the Operator shall use a different sump pump or sandpiper pump situated near the salvage drum to remove the wastewaters from the sump and discharge any liquids into the Drainage Basin using the connection provided.

Examples of generated non-routine wastewater that is allowed into the sump include:

- Washing down a tank
- Cleaning up spillage
- Mechanical seal leakage on pumps
- Uncoupling and flushing out the skimmer recovered oil line

Wastewater that can be captured using a bucket can be discarded into the sump. This wastewater is then transferred to the Drainage Basin. The debris should be consolidated into a 55-gallon drum. Examples of generated routine wastewater that is not allowed into the sump include:

- Cleaning the main influent strainer
- Uncoupling and flushing out clogged piping; including the skimmer recovered oil line
- Hose connection leakoff from trucks that have been discharging into the BOWTS

**At no time shall the sump at this facility be intentionally allowed to hold liquids for any routine type processing, or to intentionally transfer waste into the Drainage Basin.** For example, previous dewatering of the scum tank, which was routinely discharged to this sump, shall no longer be permitted.

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# STANDARD OPERATING PROCEDURE IWOW-053

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## TITLE: Operational Guidelines and Procedures for NBCNI Biotrickler System

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**Reference:** (a) Air Pollution Control District Permit # 977693 (NBCNI)  
(b) IWOW-043, "Vapor Carbon Management at NBCNI IWOW Treatment Plant and NBSD BOWTS"

**Enclosures:** (1) Biotrickling Filter Weekly Analog Data Summary (OTH-13)  
(2) Envirogen Biotrickling Filter Training Sheet (TR-03)  
(3) Envirogen Biotrickling Filter, Operations, Use, and Maintenance Manual (INST-03)  
(4) PPE Requirements for Specific Operations/Tasks (OTH-01)

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### 1. PURPOSE

The purpose of this procedure is to ensure proper operation and maintenance of the Biotrickling Filter located at the NBCNI Industrial Waste Treatment Plant (IWTP) and Oil Recovery Plant (ORP).

### 2. BACKGROUND

This procedure is required to ensure that the Biotrickler System is operating properly and is properly maintained. The purpose of the Biotrickler System is to reduce the contamination in off-gas from eight oily waste and industrial waste storage tanks prior to treatment of the off-gas by vapor-phase carbon and release to the atmosphere. Off-gas is routed to the Biotrickler System from Tanks T-1A, T-1B, and T-7 from the IWTP, T-4A from the ORP, T-4B that serves both the IWTP and the ORP, T-23 and T-24 from the DAF Separator, and the IWTP sludge holding tank T-34.

### 3. SCOPE

This procedure defines standard operating conditions, monitoring requirements, and maintenance requirements during normal operating conditions. The Biotrickler System normally operates continuously, 24 hours per day, seven days per week.

### 4. ACTION

This procedure applies to the Operator's responsibilities to observe, measure, and record Biotrickler System operating conditions, and to verify that those conditions are within normal operating ranges. This procedure also identifies required visual checks on valve positions and regular maintenance activities.

### 5. DEFINITIONS

- **Biotrickler System**—the bioreactor and ancillary equipment in place to remove hydrocarbons and sulfide from storage-tank off-gas.
- **PLC** – the programmable logic controller that is programmed to control automatic functions of the Biotrickler System.

## 6. RESPONSIBILITIES

### 6.1 Plant Operator

Operators are responsible for the following:

- Reading, understanding, and being familiar with the details provided in the Envirogen Biotrickling Filter Training Sheet (**Enclosure 2**), and the Envirogen Biotrickling Filter, Operations, Use, and Maintenance Manual (**Enclosure 3**).
- Recording operating parameters on the Biotrickling Filter Weekly Analog Data Summary (**Enclosure 1**), and completing all plant visual checks on valve positions.
- Reviewing the measured and recorded data for changes from week to week.
- Reporting changes or trends in recorded data to Management or Lead Operator and seeking guidance on what, if any, corrective action is required.
- Notify the Lead Operator on low supply of chemical and nutrients, and restock as advised.
- Confirm that manual water-control valves are in the OPEN position to allow automatic blowdown and clean-water makeup as programmed by the PLC.
- Completing required routine maintenance.

## 7. PROCEDURE

### 7.1 Routine Maintenance

Operators shall be responsible for completing the following routine maintenance tasks:

- Once per quarter, clean out the mist eliminator using the procedures in the Envirogen Biotrickling Filter, Operations, Use, and Maintenance Manual (**Enclosure 3**).
- Once per quarter, visually check the Pitot tube for deposits and clean the pitot tube of deposits if observed.
- Once per quarter, clean accumulated biomass from the level sensors.
- Once per month, drain condensate from Tank -1A and 1B off-gas inlet line.
- Once per month, check water hardness and conductivity.
- Once per month, check system nutrient levels: ammonia nitrogen, nitrate nitrogen, phosphate phosphorus.
- Once per month, calibrate pH meter.
- Once per month, have a laboratory sampling technician test the inlet and outlet VOC content from the carbon canisters associated with the Biotrickling Filter. See **Reference (b)** for detailed discussion on the permit requirements associated with the Biotrickling Filter.

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# STANDARD OPERATING PROCEDURE IWOW-054

**TITLE: Operational Guidelines and Procedures for NBCNI Oily Waste (OW) Filter Presses**

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**Reference:** (a) US Filter J-Press Filter Press Owner's Manual  
(b) Preventative Maintenance Schedule  
(c) CCR Title 22 66265.173(a)

**Enclosures:** (1) PPE Requirements for Specific Operations/Tasks (OTH-01)  
(2) Sludge Press Bin Waste Log (OP-46)

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## 1. PURPOSE

The purpose of this procedure is to provide guidelines and procedures to operate the oily waste filter press (OWFP). This SOP deals only with the process of operating the OWFP and does not address procedures for filling or emptying of scum storage tanks, or any other tanks in-line prior to the filter press, or with disposal of the filter cake or filtrate.

For operators not previously involved in this operation they shall, at a minimum, review and adhere to the PPE requirements in **OTH-01**.

## 2. BACKGROUND

The OWFP was installed in June 2003. The filter press is dedicated to processing the oily waste (OW) from Scum Tank T1092 and, when T1092 is down for maintenance or other reasons, OW (scum) directly from T26 to T-801. In addition to the filter press there is a second filter press (OWSP-2) located next to OWSP1. The oily waste filter press system consists of the following equipment and components:

- a) Scum Transfer Pump (P1092) – Air diaphragm pump used to pump scum/sludge from T1092 to T801
- b) Oily Waste Filter Presses (OWFP-1,2) – US Filter, J-Press, Model 800G32-39-20SYLW, Serial number F07128, F008527 respectively
- c) Sludge Pretreatment Tank (T801) – Holding tank for filter press
- d) Two Filter Press Feed Pumps (1,2) – Air diaphragm pump adjacent to T801
- e) Harborlite 700 Mix Tank - The function of this tank is to mix Harborlite 700 slurry to coat the filter presses/cloth
- f) Harborlite 700 Feed Pump– Air diaphragm pump adjacent to the Harborlite 700 Mix Tank

## 3. ACTION

This procedure applies to all operators.

## 4. DEFINITIONS

- **OW Tank Bottoms Sludge**—Tank bottom sludge of T1092 with high oil/solids content (4 to 8 percent solids) generated during treatment

- **OW Scum Sludge** – OW with less solids content (1 to 2 percent solids) as compared to the tank bottom sludge
- **Filter Cake** – The volume of solids plus water that is retained within the filter press
- **Filtrate** – liquid removed from the sludge by compression and passage through the filter cloth
- **Filter Cloth** – filtering media that spans the opening of each press plate
- **Pre-coat** – A material, such as HARBORLITE 700, used to coat the filter cloth in the filter press before sludge feeding begins
- **Press Plate** – the frame that supports the filter cloth in position; two press plates together form a cavity or chamber in which sludge solids are retained and compressed into cake while filtrate is allowed to exit to tank T-4A via sump diaphragm pump
- **Follower** – the moving part of the filter press that compresses the plate stack
- **Plate Shifter** – the semi-automatic plate shifter separates press plates after the filtration process is complete and the cake is ready to be removed. It uses “push plates” to push the press plates out the compressed positioned into an open position that will allow the cake to be removed from the chambers.
- **OWFP** – oily waste filter presses (OWFP-1-2)

## 5. RESPONSIBILITIES

This section provides a list of activities, by job title, that each individual is responsible for performing in the procedure.

### 5.1 Filter Press Operator

The filter press operator is responsible for the following:

- Reading and understanding the OWFP owner’s manual
- Reading and understanding this SOP
- Following the proper procedures while operating the OWFP
- Reporting any malfunctions or operating problems to the lead operator

### 5.2 Oily Waste Lead Operator

The lead operator is responsible for coordinating, assigning, overseeing, and ensuring proper completion of tasks associated with operation of the Oily Waste Treatment Plant

### 5.3 Transferring sludge from a tank being cleaned to the sludge tank (T1092)

When you have pumped the sludge from a tank that you are going to be cleaning or getting ready to be inspected you process the tank then drain it to T-4A/B. Do not try to pump any more sludge from the tank because you risk getting oil into it.

## 6. PROCEDURE

### 6.1 Preparation to Start Up the OWFP

- a) Confirm that OW sludge is to be processed from T1092. When the OW sludge level is greater than 6 feet in T1092 the contents of T1092 can be processed.

- b) The inlet valve is normally left open, verify that it is in this position.
- c) Put the power switch for the 1092 mixer in the on position and place into the auto position, unless out of commission
- d) Turn the mixer MX1092 on and let T1092 mix for 30 minutes prior to transferring to T801.
- e) Open the valve connected to the hose at the inlet tee. Verify the T1092 inlet valve is open.
- f) Start the pump P1092 and check for leaks.
- g) Stop pump P1092
- h) Close the valve into T1092 at the tee adjacent to P1092 and prepare for transfer to T801.

### 6.2 Transfer from T1092 to T801

- a) Transfer from T1092 to T801 requires two operators with radios.
- b) Align valves in the piping from P1092 to T801 to the open position.
- c) All branch valves in the piping shall be closed
- d) After T801 is 6ft with OW sludge, tell the pump operator to turn off the pump P1092.
- e) Mixer is set to start automatically, confirm that it starts up.
- f) If additional batches are to be processed from T1092, then align valves in recirculation mode and run until next batch is required in T801 along with the 1092 mixer MX1092.
- g) If this is the last batch to be transferred to T801, then align valves such that oily waste can be pumped to T1092 and secure the mixer MX1092.

### 6.3 OWFP Pre-Coat Operation

- a) The bin under the OW filter press shall have the hard mounted pull tarp deployed over the entirety of the bin (closed and covered) at all times unless the operator is loading the bin. Per Title 22 all hazardous waste containers shall be closed during transfer and storage.
- b) If the operator suspects a rain event eminent, the operator shall, in addition to having the hard mounted pull tarp over the bin, to cover the bin with the rain tarp to prevent additional moisture entering the bin.
- c) Close the filter press plate stack by turning the selector switch to the CLOSE position. Leave the selector switch in the CLOSE position for the remainder of the press operation.
- d) Verify that valves to and from tank mixing tank are open.
- e) The PPE for handling perlite is disposable tyvek coveralls, and gloves, hard hat, boots, and full face respirator.
- f) Open water valve and fill mix tank  $\frac{3}{4}$ -full
- g) Turn mixer on in mix tank
- h) Use the following mix ratio for tank bottom sludge:
  - 1) Add 3 bags Harborlite per load.
  - 2) Filtration time is 1.3 to 1.5 hours
- i) Use the following mix ratio for scum sludge:

- 1) Add 1 pound of Harborlite 700 per gallon of scum sludge
- 2) Filtration time is less than 1.5 hours
- j) Align the valves from the mix tank to the OWFP and back to mixing tank (Recirculation mode)
- k) Start flow of the pre-coat to OWFP.
- l) After the filtrate runs clear, start the sludge pump or switch over valves on sludge lines. Velocity or sludge must be equal to or greater than the velocity of the precoat to prevent a pressure drop. Do not interrupt the flow to the Press at any time during the pre-coat or during the feed cycle.

#### **6.4 Pump sludge to the filter press and generate cake**

- a) Shut precoat valve at filter press then shut off pump..
- b) Open the lower stop valves returning to mixing tank
- c) Begin sludge feed.
- d) When water begins flowing out of press, open lower discharge valves
- e) Open the feed valve and all discharge valves.
- f) Start feed plant
- g) Continue the flow of sludge to the filter press until the water becomes just a slow trickle. This indicates that the chambers are full of cake and no more sludge can be treated until the press plates are emptied. Make certain that the water is just a trickle and the water is clear. If it is, the press isn't full. If water is not clear it may indicate that there is oil in the sludge. If there is oil in it, keep filling the press.
- h) Turn off sludge feed pump.
- i) Close the feed valve to the filter press.

#### **6.5 OWFP Shutdown Procedure**

##### **a) Normal Sludge Feed Shutdown**

- 1) Prior to emptying tank T801, the mixer should turn off automatically. Confirm that it does so. Turn the pressure regulator on the air pump to zero and close the tank discharge valve.
- 2) Close the inlet valve to the OWFP at the OWFP header on the platform

##### **b) Emergency Sludge Feed Shutdown**

- 1) Turn the pressure regulator on the air pump to zero.
- 2) Advise lead operator immediately of condition requiring emergency shutdown.

#### **6.6 Empty the Filter Cake from OWFP**

Note: Air pressure should be regulated to 40 psi maximum

- a) Confirm valves in the OWFP discharge piping to the sump are aligned.
- b) Open the lower right discharge valve and close all the other discharge valves. Important: be sure to open the drainage valves.
- c) Close the feed valves

- d) Open the blowdown air-valve to the filter press for about 2-3 minutes to remove excess liquid from the plates prior to opening the plate stack. Do not run for more than 30 minutes as it wastes energy and does not make the cake drier.
- e) Ensure that you open the valves before you empty the press.
- f) Uncover the bin and unwrap the filter cake in the bin. Be sure that you have secured the liner so that it doesn't fall in and get pinned under the sludge.
- g) Open the filter press plate stack by turning the selector switch to the OPEN position. The pressure in the press will be released and the follower will open.
- h) Move the plate-shifter so that the push plates are positioned between the two plates to be moved.
- i) Press and hold the rocker switch in the open direction. This will cause the push-plates to rise into position and then begin pushing the press plates to the opposite side, separating them for cake removal.
- j) After the first press plate is separated, release the rocker switch, allowing the push plates to lower.
- k) Press and hold the rocker switch in the opposite direction to retract the push-plates so the process may be repeated until the plate stack has been fully shifted.
- l) The cake is now available for removal. Remove cake embedded on the filter cloth using the designated plastic scraper.
- m) The cake should be solid and resemble fresh asphalt. If it is runny contact a supervisor
- n) .General Shutdown Items
  - a) Flush lines from T801 to sump
  - b) Empty water from mixer tank
  - c) Clean up area under and adjacent to the filter press of spilled filter cake.
  - d) Make sure that the filter cake is properly wrapped in the plastic burrito wrap and that the bin tarp is pulled over the bin and tied down.
  - e) Fill in the required information into OP-46 (See **Enclosure 2**).

## 6.7 Maintenance

The manufacturer's recommended maintenance schedule included in the Owner's Manual must be followed while the filter press is in continuous use. If the filter press will be unused for a period longer than 1 week, it must be thoroughly cleaned according to manufacturer's recommendations after the last filter cycle and prepared for dry storage until the next sludge treatment is required.

The preventative maintenance plan covers the schedule for normal and preventative maintenance of the filter press equipment. Periodic inspections and replacement of worn parts will increase the reliability of the filter press system. Items such as:

- Check for filter cloth holes or cloths out of grooves
- Clean sealing areas of excessive solids
- Periodically wash cloths with water
- Replace damaged cloths
- Inspect hydraulics for leakage

- Check for correct clamping pressure
- Check for correct relief valve setting
- Check oil level in hydraulic reservoir
- Periodically replace hydraulic oil
- Clean and replace oil filters
- Clean or replace air filter elements for hydraulic cabinets, shifter, and air diaphragm pumps
- Clean plate shift rods

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# STANDARD OPERATING PROCEDURE IWOW-058

**TITLE: Operational Guidelines and Procedures for NBCNI IWOW Plant Air System  
(Located Next to Sand Filter Area)**

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**Reference:** (a) SULLAIR® "Industrial Air Compressor LS-160 Operator's Manual and Parts List"  
(b) Installation of CRP PAK With Decompression Chamber"  
(c) PneumaTech® "Non-Cycling Refrigerated Air/Gas Dryer Owner's Manual"  
(d) "Improving Compressed Air System Performance," Lawrence Berkeley National Laboratory, Washington, DC  
(e) "Inspection and Certification of Boilers and Unfired Pressure Vessels," Military Handbook, MIL-HDBK-1152, 1996

**Enclosures:** (1) PPE Requirements for Specific Operations/Tasks (OTH-01)

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## 1. PURPOSE

The purpose of this procedure is to provide guidelines and operating procedures for the NBCNI IWOW Plant Air System.

For operators not previously involved in this operation they shall, at a minimum, review the PPE requirements in **OTH-01**.

## 2. BACKGROUND

This air compressor was installed at the facility in July 2004. The air compressor provides all of the plant air required to run the IWTP and the ORP plus additional air for maintenance purposes. The Plant Air System consists of the following:

- a) Sullair (Model LS-160) 75 horsepower, air cooled, air compressor.
- b) PneumaTech Compressed air/gas filter (Model P8C-187-2P).
- c) PneumaTech (Model ADS-400) refrigerated air dryer.
- d) CRP Decompression Chamber for removal of lubricants from dryer and in-line filter.
- e) Air Receiver, 1,020 gallons, 150 pounds per square inch gauge (psig) maximum working pressure.
- f) Instrumentation and control system.

A backup air supply comes from the NBCNI base air system and is piped into the Air Receiver.

## 3. SCOPE

This procedure defines the startup, operation, and shutdown of the Plant Air System including use of the NBCNI base air system when the Plant Air System fails or is down for routine maintenance.

## 4. ACTION

This procedure applies to all operators and qualified maintenance contractors

## 5. PROCEDURE

### 5.1 Start-up of Plant Air System

- a) Verify breaker at Main Power Panel, panel section five (from left to right), is in the ON position.
- b) Verify that the compressor and air dryer circuit breakers, located on the local power panel attached to the cinder block wall, are in the ON position.
- c) Check the fluid level is visible on the sump fluid sight glass attached to the sump tank. If liquid is not visible in sight glass, then add fluid.
- d) Air Dryer is equipped with compressor crankcase heater. This heater must be energized by closing the disconnect switch 6 to 10 hours before startup. Power to the air dryer can be left on to energize the crankcase heater during maintenance or emergency air compressor shutdown.
- e) Check the temperature on the crankcase of the dryer compressor to ensure the heater is working before starting the dryer.
- f) Turn the dryer power on/off switch to the ON position.
- g) Wait 10 to 15 minutes before starting the air compressor
- h) Verify AUTO symbol on the control panel mounted on the air compressor is displayed, indicating compressor is in automatic mode. In HAND mode the compressor will run continuous. It will load and unload at the pressure set points.
- i) Press the air compressor START pad.
- j) Check for any leaks in air compressor or dryer.
- k) Slowly open the dryer outlet isolation valve to pressurize the air receiver.
- l) Verify the pressure at the air receiver.

### 5.2 Operating Plant Air System

- a) When the compressor is running, observe instrument panel and maintenance indicators including the air discharge temperature gauge, line pressure gauge, and system pressure gauge.
- b) Verify when air pressure drops to 110 psi the compressor will automatically start and run until line pressure is between 125 to 135 psi.
- c) Check for possible leaks in piping.

### 5.3 Shutdown Procedure

#### 5.3.1 *Normal*

- a) To shut the compressor down, simply press the STOP pad.

#### 5.3.2 *Emergency*

- a) Pushing in the red emergency STOP button, found adjacent to the controller, cuts all AC outputs from the latter and de-energizes the starter.

- b) The Plant Air System can also be shut down at the local power panel by moving the power circuit breaker handle to the OFF position for both the air compressor and air dryer.

#### 5.4 Startup of Backup NBCNI Base Air Supply

- a) If the Plant Air System is down for longer than 10 minutes and plant air is required, transfer over to NBCNI base air supply.
- b) Secure the air compressor by pushing the red emergency STOP button, found adjacent to the controller.
- c) Close inlet valve to air receiver tank from air dryer.
- d) Currently the base air supply is secured coming into the IWOW plant by two tagged and locked out valves. These valves are located outside the fence by Building 795.
- e) Secure all power at the local control panel to the air compressor and air dryer.
- f) Secure air inlet valve located at the top of the air receiver.
- g) Unlock the valves outside of the fence and very slowly open the two ball valves.
- h) Verify the pressure at the air receiver.

#### 5.5 Restart of Plant Air System

The NBCNI IWOW Plant Air System will supply air to the facility except when the air system is down for maintenance or an emergency shutdown. For both of these conditions a Maintenance Request Form (MRF) will be completed by the shift supervisor or designee. This form, in addition to the lead operator, will convey in writing and verbally to follow-on shifts that air is being supplied by the NBCNI Base. The shift that restarts the Plant Air System will follow the following procedure and advise by memo and verbally that the NBCNI IWOW facility is back on the Plant Air System.

- a) Verify breaker at Main Power Panel, panel section five (from left to right), is in the ON position.
- b) Verify that the compressor and air dryer circuit breakers, located on the local power panel attached to the cinder block wall, are in the ON position.
- c) If the crankcase heater is off then the heater must be energized by closing the disconnect switch 6 to 10 hours before startup. Check the temperature on the crankcase of the dryer compressor to ensure the heater is working before starting the dryer.
- d) Verify that the number of air users on-line is minimal and there is sufficient air capacity in the air receiver to accommodate the restart, which could take approximately 30 minutes.
- e) Close and lock out the two base air supply valves. These valves are located outside the fence by Building 795.
- f) Bleed off any pressure in the piping feeding the Plant Air Receiver.
- g) Open the Plant Air System inlet valve to the air receiver.
- h) Check the fluid level is visible on the sump fluid sight glass attached to the air compressor sump tank.
- i) Turn the dryer power on/off switch to the ON position.
- j) Wait 10 to 15 minutes before starting the air compressor.

- k) Verify AUTO symbol on the control panel mounted on the air compressor is displayed, indicating compressor is in automatic mode. In HAND mode the compressor will run continuously. It will load and unload at the pressure set points.
- l) Press the air compressor start pad.
- m) Check for any leaks in air compressor or dryer.
- n) Slowly open the dryer outlet isolation valve to pressurize the air receiver.
- o) Verify the pressure at the air receiver.
- p) Operate the Plant Air System per Section 5.2.

**6. PREVENTIVE MAINTENANCE**

The following procedures should be followed when stopping the compressor and air dryer for maintenance or service.

- a) Prior to performing maintenance on the Plant Air System, disconnect and lockout the main power source per Occupational Safety & Health Administration regulation 1910.147.
- b) Compressor should be cool before starting any maintenance.
- c) Refer to and give preference to manufacturers manuals over this section.
- d) The system shall be isolated or depressurized before performing maintenance.

The following table shows typical maintenance procedures for the Plant Air System. This table was generated based on references (a), (b), (c) and (d). These items may be performed by Operator personnel or a qualified maintenance contractor. In addition, this table provides guidance when maintenance activities should be scheduled by the operators. The maintenance indicator on the air compressor provides an indication when routine maintenance items should be performed. These items will be integrated into the facilities preventive maintenance program.

The air receiver and components are subject to inspection per the Military Handbook 1152. The MIL-HDBK-1152 requires that unfired pressure vessels be inspected both internally and externally every two years or more frequently and after any repair or alteration. This inspection shall be performed by an ASME Boiler and Pressure Vessel Code certified inspector.

**PREVENTATIVE MAINTENANCE**

| ITEM | EQUIPMENT COMPONENT       | PERFORMED BY | DESCRIPTION   | FREQUENCY  |
|------|---------------------------|--------------|---|--|
| 1    | CRP Decompression Chamber | Operator     | Monitor water being discharged from CRP Tank. When water turns cloudy replace unit                        | 6 months   |
| 2    | Air Compressor            | Operator     | Check oil level by looking at the sight glass on the sump   | Periodically when compressor is in shutdown mode |
| 3    | Air Compressor            | Operator     | Check maintenance gauge. When maintenance gauge shows red, maintenance for the specific item is required. | Per maintenance schedule                         |

| ITEM | EQUIPMENT COMPONENT                | PERFORMED BY | DESCRIPTION  | FREQUENCY   |
|------|------------------------------------|--------------|--|---|
| 4    | Air Compressor                     | Contractor   | Clean return line strainer and return line orifice   | Every 50 hours of operation                                 |
| 5    | Air Compressor                     | Contractor   | Clean return line strainer and replace fluid filter element and gasket   | First 1,000 hours of operation                              |
| 6    | Air Compressor                     | Contractor   | Clean return line strainer and replace fluid filter element and gasket   | As indicated by maintenance gauge or every third oil change |
| 7    | Air Compressor                     | Contractor   | Replace separator elements   | As indicated by maintenance gauge or once a year            |
| 8    | Air Compressor                     | Contractor   | Air Filter element   | As indicated by maintenance gauge or once a year            |
| 9    | Air Compressor                     | Operator     | Check the pressure range and deferential pressure. Adjust if required.   | Monthly   |
| 10   | Air Compressor                     | Contractor   | Inter-cooling surfaces and motors need to be kept clean and foul free.   | Yearly or as warranted by site conditions                   |
| 11   | Air Compressor                     | Contractor   | If synthetic oil is used change as indicated   | 1,000 hours or every 6 months, whichever occurs first       |
| 12   | Air Compressor                     | Operator     | Drain receiver tank, drop legs, and traps. Visually inspect compressor. Check for noise or vibration. Check lubricant pressure. Check for lubricant leaks. | Daily   |
| 13   | Air piping, valves and connections | Operator     | Check for visual signs of leaks. Check that pressure relief valves are working.  | Weekly  |
| 14   | Refrigerated Air Dryer             | Operator     | Check drain valve is not stuck open  | Weekly  |
| 15   | Refrigerated Air Dryer             | Operator     | Check the suction pressure gauge. Reading should be within the specified range 53 to 60 psi.   | Weekly  |

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## STANDARD OPERATING PROCEDURE IWOW-062

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### TITLE: Post Tank 8 Discharge Procedure for Treated Industrial Waste Water

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- Reference:
- (a) Calgon Carbon Corporation Customer Service Manual
  - (b) Dual Media Filter Units Installation, Operation, and Maintenance Manual – Loprest Water Treatment Company, Rodeo, California
  - (c) Operating Procedures How to Properly Characterize, Jar Test, Treat, and Discharge Full Tanks at the North Island Industrial Waste Treatment Plant (IWTP), Section 7.7 SOP IWOW-011
  - (d) Backflushing the pressure vessels, air scouring backwashing the dual media sand filters IWOW-013
  - (e) PE Certification for the Dual Media Filter Units T-10 (A,B,C)
  - (f) PE Certification for the Carbon Adsorber Pressure Vessels (PV-1,2,3,4)
  - (g) DTSC Part B Permit 97-SC-002 and Application
  - (h) IUDP MWWWD Discharge Permit

- Enclosures:
- (1) IWTP Batch Discharge Checklist (OTH-07)
  - (2) Wet Carbon Adsorbers and Sand Filter Plot Plan (DRW-01)
  - (3) Series Operation: PV-1 to PV-2 or PV-3 to PV-4 (DRW-02)
  - (4) Single Adsorber Operation: PV-2 or PV-4 (DRW-03)
  - (5) Series Operation: PV-2 to PV-1 or PV-4 to PV-3 (DRW-04)
  - (6) Single Adsorber Operation: PV-1 or PV-3 (DRW-05)
  - (7) Calgon Model 10 Pressure Drop Table (Non BW Parallel) (OTH-74)
  - (8) NBCNI Sand Filter Processing Checklist (CL-24)
  - (9) Parallel Adsorber Operation: All Four (PV-1 to PV-2 and PV-3 to PV-4)
  - (10) NBCNI Carbon Adsorbers (All Four) Differential Pressure Monitoring Log (CL-35A-B and CL-35C-S)
  - (11) NBCNI Sand Filter (Dual Media Filter) Differential Pressure Monitoring Log (CL-11)
  - (12) NBCNI Dual Media Filter Air Scour Procedures (CL-27)
  - (13) NBCNI Dual Media Filter Backwash Procedures (CL-28)
  - (14) PPE Requirements for Specific Operation/Tasks (OTH-01)

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### 1) PURPOSE

- a. To establish operating procedures for processing treated industrial wastewater from the surge tank (T-8) through the dual media filters and wet carbon adsorption system prior to discharge to the sewer, at the NBCNI Industrial Waste Treatment Plant (IWTP).
- b. For Operators not previously involved in this operation they shall, at a minimum, review the PPE requirements in **OTH-01**.

### 2) BACKGROUND/HISTORY

- a. Industrial wastewater is chemically treated, to generate heavy metal precipitate, in batch tanks, then transferred to a clarifier (T-7) for physical separation of the sludge that is generated in the batch process. The supernatant water is then transferred through an overflow of T-7 through a weir to T-8 for further (physical) processing in dual media filters, to remove suspended particulate, and carbon adsorbers, to remove organics (through adsorption into the pores of the granular activated carbon), prior to discharge to the sewer.

- b. Proper operation of the post T-8 filtration equipment to physically remove suspended particulate matter which may contain heavy metals and adsorption of dissolved organics is a key part of the discharge process.

### 3) ACTION

- a. Operator IWTP/ORP Operations personnel.
- b. Use IWTP Batch Discharge Checklist (**Enclosure 1**; OTH-07) to document the discharge.
- c. Refer to plant drawings, if necessary (**Enclosures 2, 3, 4, 5, and 6**).
- d. Refer to Calgon Model 10 Pressure Drop Table (Non BW Parallel) (**Enclosure 7**; OTH-74).

### 4) PROCEDURE

- a. Under normal operating conditions all three dual media filters (T-10A, B, and C) and all four carbon adsorption pressure vessels (PV-1, 2, 3 and 4) will be used during discharge of treated industrial waste water.
- b. Any deviation from this configuration shall be approved by the IWOW Manager.

### 5) Valve Configuration

- a. Refer to **Enclosure (8)** for valve alignment to use all three dual media filters.
- b. Refer to **Enclosure (9)** for valve alignment to use all four carbon adsorption pressure vessels.
- c. Lead Operator will provide the Operator with the dual media filter valve and carbon adsorber valve alignment schematic. This schematic will show which specific valves will need to be open/closed for discharge. The Operator will then align the valves. Lead Operator or designee will independently review valve alignment on dual media filters and carbon adsorbers to verify consistency with the schematic and sign off on schematic. This documentation will be included in the batch folder.

### 6) Start-up/Monitoring

- a. Refer to **Enclosure (10)** for the proper pressure differential monitoring log for the dual media filters.
- b. Refer to **Enclosure (11)** for the proper pressure differential monitoring log for the carbon adsorbers.
- c. If the Operator, who is monitoring the dual media filters and carbon adsorbers during discharge, identifies a pressure differential outside the manufacturer's specifications of either system they will immediately notify the Operator of the T-8 Pump to shut down discharge. Cause of the pressure differential anomaly will be identified and corrective action will be taken to rectify the cause of the deficiency before resuming discharge.

### 7) In-Process Corrective Actions

- a. The Lead Operator will be consulted on determining the proper course for corrective action. If air scouring and backwashing of the dual media filters or backflushing of the carbon adsorbers is necessary refer to **IWOW-013** (Backflushing of the Pressure Vessels Backwashing the Dual Media Filters) and the Lead Operator will provide valve alignment schematic as defined in **Enclosures 12 and 13**, respectively. Once

corrective action is complete refer to Valve Configuration section to realign valves so that discharge can continue.

#### **8) System Shutdown**

- a. Initiate preventative maintenance to prepare the dual media filters/carbon adsorbers for future discharges. This may include backwashing/flushing of the systems and or other actions to properly place the system in standby mode. Operators will get direction from the Lead Operator on this course of action.

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# STANDARD OPERATING PROCEDURE IWOW-063

## TITLE: IWOW Tank Cleaning Procedures

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**Reference:** (a) Title 29, Code of Federal Regulations, Part 1910.146, Permit Required Confined Spaces  
(b) OPNAVINST 5100.23 Series, Chapter 27, Confined Space Entry Program (Non-Maritime)  
(c) Contractor Corporate Health and Safety Procedure HS300 – Confined Spaces,  
(d) Contractor Permit Required Confined Space Entry Program (for IWOW/BOWTS activities)  
(e) Contractor Energy Elimination and Control Program (LOTO)  
(f) Contractor Site Health and Safety Plan  
(g) Contractor Accident Prevention Program  
(h) Title 29, Code of Federal Regulations, Part 1910.120, Hazardous Waste Operations and Emergency Response

**Enclosures:** (1) Tank Cleaning Work Plan Checklist (CL-20)  
(2) PPE Requirements for Specific Operations/Tasks (OTH-01)  
(3) Job Safety Analysis and Planning (HS-08)  
(4) Entry Permit for PRCS (HS-02)  
(5) PRCS Pre-Planning Checklist (HS-03)  
(6) Energy Elimination and Control Procedure (HS-06)  
(7) Group Energy Elimination & Control Procedure Continuation Sheet (HS-07)

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### 1. PURPOSE

The purpose of this procedure is to provide a general outline for tank cleaning operations and provide information on workplace health protection for such operations.

For operators not previously involved in this operation they shall, at a minimum, review the PPE requirements in **OTH-01**.

### 2. ACTION

IWOW Personnel

### 3. BACKGROUND

1. Tanks of various sizes, shapes, and construction materials are used to store hazardous materials and hazardous wastes at the Naval Air Station, North Island (NBCNI), Industrial Waste/Oil Recovery Plant (IWTP/ORP), and the NBSD, NAB, and NBPL Bilge & Oily Waste Treatment Systems (BOWTS). The most common reasons for cleaning tanks include: periodic internal inspections, maintenance, changing service, repairing a leak, to remove sludge, and to prepare for contractors conducting services such as tank testing.
2. The preparations to enter tanks and carry out an inspection, cleaning, or other work are generally the same. They involve emptying waste from the tank, implementing Energy Control (LOTO), confined space entry (both permit-required and non permit), water washing, and ventilating the tank until the contaminant concentration is acceptable or sufficiently low to allow entry without respiratory protection.
3. This procedure is written as a generic tank cleaning guide for any personnel involved with tank cleaning work. It incorporates information relative to entry permit requirements; tank cleaning

procedures; atmosphere testing requirements; the need for a standby person; area access restrictions; recommended ventilation and monitoring practices; equipment needs; special health concerns associated with some materials that may be present (e.g., hydrogen sulfide, benzene, etc.) and other information that will help ensure tank cleaning work is completed without adverse health effects to personnel. To ensure that the proper precautions and provisions for such work are implemented, a tank cleaning checklist has been provided as **CL-20**.

4. Before any entry and internal tank cleaning is initiated, the tank must be evaluated to determine its status under the requirements of the facility's Permit-Required Confined Space Entry Program **{Reference (d)}**. Policies and procedures for confined space entry shall be in accordance with **Reference (a)** through **(h)**.

#### 4. TANK CLEANING PROCEDURES

1. A pre-cleaning meeting shall be held with the personnel involved and a Job Safety Analysis & Planning form to be completed for the operation. Procedures for transfer of tank contents, cleaning procedures, the confined space entry permit requirements, ventilation requirements, Energy Elimination and Control (LOTO) Procedures, health and safety elements, emergency procedures, and the respective roles and responsibilities of personnel shall be reviewed during this meeting, in accordance with **References (c) through (g)**.
2. Liquids in the tank shall be pumped down to the lowest level possible. Removal of residual wastes (i.e., solids, sludge, liquids) is to be accomplished from outside the tank to the extent possible. Methods to accomplish this include, rinsing tank with fresh water, vacuuming liquid/sludges with a vacuum hose, and recirculating liquids to agitate the solids/sludge to facilitate removal.
3. All exterior power supply sources and pipelines leading to the tank shall be secured in accordance with the Energy Elimination and Control Program before opening the tank.
4. Ancillary tank instrumentation shall be removed as necessary.
5. Ventilate the tank to the extent possible and exhaust vapors from tanks through top manways to minimize vapor contamination around the tank. Use of ventilator equipment Granular Activated Carbon (GAC beds or carbon cartridge vents and/or ventilation fans) may be required.
6. Entry into the tank will be governed by the Permit-Required Confined Space Entry Program **(Reference (d))**.
7. Assemble all equipment, tools, and supplies identified for the tank cleaning project and have them readily available in a staging area. Electric tools used in or around a tank shall be connected to electric outlets with ground fault circuit interrupters. If flammable atmospheres are reasonably possible, non-sparking tools (i.e., plastic shovels) shall be used to remove sludges from inside the tank.
8. Each individual shall inspect their personal protective equipment prior to use and replace any defective equipment.
9. Prior to entry any potential entrant will follow EECF and PRCS Procedures to include:
  - Continuous air monitoring will be performed during the entry for acceptable oxygen levels, lower explosive limit levels, carbon monoxide levels and hydrogen sulfide levels.
  - confirming Energy Control Procedures
  - Applying lock(s) to control device(s)

- Sign EECP Group log for that tank
  - Review entire PRCS entry permit for acceptable entry conditions
  - Initial or sign permit acknowledging safe entry conditions.
10. The progress of the tank cleaning job shall be documented on the appropriate daily log sheets. Entries shall include any changes to the work plan, the health and safety plan, spills, injuries, or incidents that may need to be reported.11. All waste (i.e., sludge, rags, contaminated PPE, debris, etc.) generated from the tank cleaning activities shall be properly containerized, labeled, and managed.
12. Prior to returning a tank into operation, any equipment or pipelines taken out of service under the Energy Elimination and Control Program (EEC Program) will be returned to service in accordance with the EEC Program (**Reference (e)**).

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# Standard Operating Procedure IWOW-064

**TITLE: Hazardous Material Spill Contingency and Emergency Response Plan – Bilge and Oily Wastewater Treatment System, Naval Base San Diego BOWTS Facility**

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**References:** (a) Title 40, Code of Federal Regulations  
(b) Title 19, California Code of Regulations  
(c) Title 22, California Code of Regulations  
(d) California Health & Safety Code, Chapter 6.5  
(e) California Health & Safety Code, Chapter 6.95  
(f) COMSC INSTRUCTION 5090.1 (Series) – Oil and Hazardous Substances Pollution Contingency Plan  
(g) COMSC INSTRUCTION 5090.2 (Series) – Hazardous Material Spill Reporting

**Enclosures:** (1) BOWTS Site Map, Naval Base San Diego (Map 1)  
(2) BOWTS Evacuation Floor Plan, Naval Base San Diego (MAP-03)  
(3) Map Symbols Chart (MAP-02)  
(4) Emergency Contacts and Telephone Numbers, Naval Base San Diego (OTH-93)  
(5) Hazardous Material Spill Report Form (OTH-65)

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## 1. PURPOSE

To establish a hazardous material spill contingency and emergency response plan to provide standardized procedures for (Operator) personnel to respond to hazardous substance releases and emergency situations at the Naval Base San Diego (NBSD) Bilge and Oily Wastewater Treatment System (BOWTS) facility (including treatment facility and all ancillary equipment, pump Bases, piping to pier risers) headquartered in Building 3588.

## 2. ACTION

This document applies to all Operator personnel at the Naval Base San Diego (NBSD) BOWTS under Environmental Services Contract.

A copy of this plan is maintained on file at the NBSD BOWTS office (Building 3588) and Environmental Office (Building 1606, Naval Base Coronado North Island). Operators and management personnel responsible for implementation of this plan will review and document that they are familiar with this plan.

Copies of this SOP have been provided to:

- The subject matter expert (the NAVFAC Environmental Services or successor entity)
- Federal Fire Department – NBSD
- Base Security Emergency Department
- Scripps Mercy Hospital Chula Vista, 435 H Street, Chula Vista, CA 91910
- Command Duty Officer (CDO) Desk

### 3. SCOPE

This standard operating procedure (SOP) has been developed to meet the requirements of Title 19, California Code of Regulations, Title 22, California Code of Regulations, as well as California Health and Safety Code Chapters 6.5 and 6.95 (**References a through e**), as applicable to the operations conducted by Operators under Environmental Services Contract. This plan describes the actions that BOWTS personnel shall take in response to fire, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.

### 4. BACKGROUND

The United States Naval Base, San Diego (also known as 32<sup>nd</sup> Street Naval Base or NBSD) is a limited-access facility that operates 24 hours a day, 7 days a week. It occupies more than 1,000 acres along the eastward edge of San Diego Bay and south of the Coronado Bridge. The U.S. Navy acquired the land in 1921 to use as a ship repair base. Entrances to the installation include four gates located off Harbor Drive and 32<sup>nd</sup> Street in San Diego, and 8<sup>th</sup> Street and 19<sup>th</sup> Street in National City. NBSD is the home of the U.S. Pacific Fleet and, as such, is the site of significant repair, refurbishment, maintenance, and upkeep of naval vessels.

Operators, under Environmental Services Contract, provide treatment and management of on-site generated bilge and oily wastewater. The treatment facility, known as BOWTS, is located on Womble Street between 10<sup>th</sup> and 11<sup>th</sup> Streets in the southern part of NBSD. The treatment facility, which is surrounded by concrete block walls and gates, consists of feed pumps, an oil-water separator, an induced air flotation unit, sludge processing equipment, influent and recovered oil storage tanks, and associated piping.

Oily waste is received from ship or vacuum trucks, and is initially pumped into one of four 150,000-gallon Load Equalization Tanks (LETs) (LET-201, LET-202, LET-203, LET-204). The LETs are used for the settling process. Three separation stages are performed within the equalization process:

1. Oil floats to the top forming an oil blanket which is skimmed off to one of three oil recovery tanks (two 50,000-gallon tanks and one 115,000-gallon tank) (T-302, T-303, T-304). The oil is shipped out on a bill of lading.
2. Sludge that accumulates in the bottom of the LET is pumped into one of two 10,000 gallon sludge tanks (T-402, T-403). The sludge is de-watered and the sludge cake is processed as hazardous waste. Water is returned to the LET for processing.
3. Oily water is pumped from the LETs to the plate separator(s) where the oil is separated from the water and returned to the oil recovery tanks. The water is treated with polymer, caustic, and emulsion, and is sent through the induced air floatation (IAF) tank to meet the sewage discharge limits. The scum line collects scum and returns it to the sludge tanks (Tank 402 or 403). Water is discharged under an industrial permit to the San Diego City Metropolitan Wastewater Department.

#### 4.1 Arrangements with Local Authorities

The BOWTS is a Navy owned facility. Federal Fire conducts regular inspections at the facility and has been provided information regarding the facility operations and hazardous materials. Base Security also has access to the facility and has been provided copies of this plan. Additionally, the Navy has entered into a Mutual Aid Agreement with City of San Diego, the San Diego Fire Department and the City of Coronado to respond to emergencies if needed.

Scripps Mercy Hospital in Chula Vista has been contacted and provided information regarding the hazardous materials handled at the facility and the types of injuries and illnesses that could result from facility operations.

## 5. PROCEDURE

### 5.1 General Evacuation Procedures

In the event of an emergency, employees will be notified to evacuate the facility by shouting or by use of a device such as a personnel hazard alarm (air horn). Employees will evacuate via the nearest safe exit and meet at the staging area designated (Corner of Womble and 11<sup>th</sup> street on the sidewalk in front of the BOWTS compound) on the site-specific plans and maps found in **Enclosures 1, 2, and 3**. The radio logs, operator logs, watch bill and visitor logs should be taken to the rally point while evacuating (if safe to do so). Close but do not lock both gates. The contingency plan is in the visitor log. The Emergency Coordinator, alternate Emergency Coordinator, Lead Operator, or, in their absence, the discoverer assumes responsibility to effect evacuation and coordinate response (which may simply be to remain in the staging area) until the Federal Fire Department arrives.

### 5.2 Notification Procedures

In the event of an emergency situation—fire, explosion, injury, release or threatened release of hazardous material—the Emergency Coordinator, Alternate Emergency Coordinator, Lead Operator, or (in their absence) the discoverer, will notify the following:

- 1 **Federal Fire Department**, (Telephone Number on base: 9-911). Federal Fire Department is the designated first responder and is to be contacted in the event of any emergency. Upon notification/arrival on scene, the Federal Fire Department response person becomes the Emergency Coordinator and is responsible for coordinating all emergency response efforts. This responsibility includes ambulance dispatch and communication with Navy medical centers, local police departments, and local fire departments.
- 2 **IN WATER SPILLS - Port Operations Officer**, Telephone Number 619-556-0634; battle watch supervisor (619) 556-7615 (after work hours). In-the-water spills shall be reported to the Port Operations Officer and Central Oil Recovery at (619) 556-8006.
- 3 **Water Front Coordinator 619-556-6232 office or 619-954-3147 cell**
- 4 **Commanding Officer – Naval Base San Diego through the Command Duty Officer**. Notify the CDO at **619-247-8897**
- 5 **Utilities/NAVFACSW Duty Desk**: If the emergency situation requires utility services outage or effects utility services, contact the Utilities/NAVFACSW Duty desk at 619-556-7349
- 6 **Commander Navy Region Southwest Installation Program Director Office (CNRSW)**. The CNRSW Environmental staff is responsible for oversight regarding both internal and external reporting. The CNRSW telephone numbers are as follows:
  - CNRSW Environmental NBSD Site Team Office: (619) 556-1537
- 7 **NAVFAC Environmental Services Representative**: Contact the Residual Organization (RO) representative at 619-571-4175 within 30 minutes after contacting Federal Fire.
- 8 **Clean Harbors**, Telephone Number (619) 545-6520: Clean Harbors has been contracted by Operator to assist with any cleanup activity. BOWTS operations personnel will contact Clean Harbors to assist in any cleanup activity deemed necessary.

- 9 **Operator Management Notifications:** The BOWTS operators shall immediately notify all Management personnel of all emergencies. Individuals reporting releases or potential releases shall provide the information listed below. The information is used to prepare the Hazardous Material Spill Report (**Enclosure 5**) and to arrange for additional personnel and material assets required to contain and clean up releases. For releases occurring after hours, the Lead Operator shall provide the information below on the next business day.
- The name of the person reporting.
  - The name of the hazardous substance released; i.e., if oil, specify type, estimate percentage of oil/water mixture, describe unknown substances fully (color, viscosity, odor, etc.).
  - The quantity of hazardous materials/waste released, or that could potentially be released.
  - Date and time that the spill occurred and duration, if applicable.
  - The exact location of the release or potential release (i.e., base, building or pier number, area of building [north side, southeast corner]), media affected (i.e., air, water, soil).
  - The potential hazard presented by the release, including health and environmental (if known).
  - Cause of the release. Provide details as to container type, operations being conducted at the time, etc.
  - Conditions at the release site. If it is an oil release to water, include slick size, direction, movement and speed, wind direction and speed.
  - Actions taken and other actions planned (i.e., samples taken, release contained, etc.); if no action has been taken state reasons.

This information shall be recorded on the Hazardous Material Spill Report (**Enclosure 5**).

The Emergency Coordinator will contact the necessary agencies in accordance with the Red Plan.

- 10 **State Office of Emergency Services:** The State Office of Emergency Services (800-852-7550) is to be notified immediately upon determination that a release or emergency situation requiring notification has occurred. The Emergency Coordinator is to assure that the required notifications are made.

**NOTE:** *Discharges of hazardous materials to secondary containment and hazardous material discharges controlled on site are not considered releases. As such, discharges of this nature do not activate this contingency plan and may not be subject to the notification requirements outlined in 22 CCR §66264.56.*

Refer to the Red Plan for further agency notification requirements.

## 5.3 Emergency Procedures

### 5.3.1 General Procedures

The following general procedures should be followed for all BOWTS emergencies:

1. Remain calm. Take time to evaluate the situation; think it through and decide the next course of action. **Personnel safety will be your paramount guideline.**

2. Discontinue all waste-receiving operations and de-energize all processing equipment if it is safe to do so. Alert others nearby of the emergency and ask them to get help and/or call for necessary assistance.
3. Evacuate the area. Ensure that all unnecessary and uninvolved personnel are clear of the problem area.
4. If safe, rescue all injured personnel. Decontaminate if necessary.
5. If safe, control or contain any spill or leak of hazardous material.
6. When the emergency has been resolved, evaluate the incident and the responses to determine if there were any lessons to be learned.

#### 5.3.2 Fire

Employees will evacuate per the procedures described in Section 5.3.1. The Emergency Coordinator or Supervisor will contact the Federal Fire Department (9-911). If safe, the supervisor or in-house trained personnel will secure all power, close windows and doors (administration spaces), and attempt to control the fire using an appropriate fire extinguisher agent. Other hazardous materials should be relocated to avoid exposure to the fire or excess heat and to facilitate fire department access to burning materials. First aid or CPR should be used on injured individuals as needed until medical assistance arrives. All visitors and personnel not directly involved in fire fighting shall remain clear of the scene. The BOWTS supervisor shall provide information and assistance, as needed, to fire fighters and other emergency responders.

#### 5.3.3 Release or Potential Release of Hazardous Materials/Waste

The Supervisor or Emergency Coordinator will determine if in-house personnel are able to control and contain a hazardous material/waste release. Materials such as absorbent, shovels, brooms, and 55-gallon drums will be used for spill containment and cleanup. **PERSONNEL WHO DO NOT HAVE THE PROPER TRAINING AND PROTECTIVE EQUIPMENT WILL NOT PARTICIPATE IN HAZARDOUS MATERIAL SPILL CLEANUP. PERSONNEL SAFETY WILL BE A PRIME CONSIDERATION AT ALL TIMES.** If the Supervisor or Emergency Coordinator determines that the release or potential release is too large for in-house personnel, the facility will be evacuated per Section 5.1, and notification procedures will begin. Upon arrival of the Federal Fire Department, BOWTS personnel will standby to assist as required and requested.

#### 5.3.4 Equipment and Facilities

The BOWTS will maintain the following emergency equipment at each site. Communications and alarm systems, fire protection equipment, spill control equipment, and decontamination equipment shall be tested or inspected and maintained per manufacturer's instructions. The location of the below-listed emergency equipment is shown on the Evacuation Floor Plan (**Enclosures 2 and 3**).

- ABC fire extinguishers
- Absorbent for spill control and cleanup
- Shovels, brooms, and dust pans
- Containers
- Communications Equipment
- Alarms (Fire and personnel hazard warning)
- Eye Wash and Shower

- Personal Protective Equipment
- 6. First Aid Kit

## 6.1 Duties and Responsibilities

### 6.1.1 Emergency Coordinator

Each facility that accumulates hazardous waste and/or maintains hazardous material inventories over the Threshold Planning Quantities has designated employees to be the Emergency Coordinators. These employees have the authority and responsibility for coordinating all emergency response measures and have the authority to commit the resources needed to carry out the requirements of this plan.

The names of persons designated as the Emergency Coordinators are provided in **Enclosure 4**.

**Emergency Coordinator's Duties** – In the event of a release of hazardous materials/waste, a fire, or any other emergency, the Emergency Coordinator(s) will do the following:

- Identify the nature of the problem and appropriate actions to be taken.
- Notify required personnel of any danger using the procedures listed herein.
- Coordinate and direct trained Operator personnel regarding proper control and cleanup of the release.
- Notify the Federal Fire Department as required by the nature of the problem or emergency.
- Report the spill as specified in this plan and **Reference (g)**.
- Coordinate with CNRSW environmental staff to provide all necessary cleanup, disposal, and reporting information to ensure compliance with the applicable laws and regulations.

### 6.1.2 Industrial Waste and Oily Waste Manager

The Industrial Waste and Oily Waste Manager shall do the following:

- Ensure that all BOWTS personnel receive proper and adequate training in hazardous substance spill response/cleanup and BOWTS general emergency procedures.
- Ensure that required personal protective equipment is available and used by all personnel involved in emergency response/spill cleanup operations.
- Ensure that BOWTS emergency equipment is properly maintained, adequately stocked, and in good working order.
- Ensure that communication systems, including fire alarms, radios, telephones, and personnel notification devices, are in working order.
- Ensure that all employees are thoroughly familiar with the contents of this SOP.
- Conduct regular stand-up training to discuss emergency procedures.
- Be familiar with the duties of the Emergency Coordinator and function as such, when required.
- Ensure that emergency actions and spill cleanups are conducted in accordance with **References (a) through (g)** and this SOP.

- For incidents requiring activation of this plan, the Emergency Coordinator shall ensure that a written report is submitted to the Department of Toxic Substances Control in accordance with Title 22, California Code of Regulations, Chapter 14, Article 4, within 15 days after the incident. Written reports must be reviewed by CNRSW and RO offices prior to agency submittal.

### 6.1.3 BOWTS Operators

BOWTS Operators shall do the following:

- Familiarize themselves with the contents of this SOP and **References (a) through (e)**.
- Ensure that all required personal protective equipment is worn when handling hazardous substances or engaged in spill cleanup.
- Follow the directions and guidance of the Emergency Coordinator involved in emergency situations and hazardous substance spill cleanup.
- Stand by to assist other response agencies as requested.
- Attend emergency procedure and spill response/cleanup training as directed by the BOWTS Lead Operator.
- Carry portable radios at all times, and ensure that batteries are charged and the radio is fully functional.

## 6.2 Reporting Requirements

Internal reporting per COMSC Instruction 5090 (**References f and g**) is required for all spills. Federal, state, and local regulations require reporting of hazardous material spills under certain conditions. Refer to the most recent version of the Hazardous Material Spill Report form (**Enclosure 5**) for information required for hazardous material spill reporting. The following is a summary of requirements.

- a. No external agency spill reporting is required for spills at the BOWTS that are completely contained and cleaned up on site, unless directed by the BOWTS Lead Operator.
- b. All oil spills and reportable quantity hazardous substance releases at the BOWTS that are not completely contained and cleaned up, and which migrate off site, must be reported in accordance with **References (f) and (g)**.

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# Standard Operating Procedure IWOW-065

**TITLE: Hazardous Material Spill Contingency and Emergency Response Plan – Bilge and Oily Wastewater Treatment System (BOWTS), Naval Submarine Base Pt. Loma**

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**References:** (a) Title 40, Code of Federal Regulations  
(b) Title 22, California Code of Regulations  
(c) Title 19, California Code of Regulations  
(d) California Health & Safety Code, Chapter 6.5  
(e) California Health & Safety Code, Chapter 6.95  
(f) COMSC INSTRUCTION 5090.1 (Series) – Oil and Hazardous Substances Pollution Contingency Plan  
(g) COMSC INSTRUCTION 5090.2 (Series) – Hazardous Material Spill Reporting

**Enclosures:** (1) BOWTS Site Map, Naval Submarine Base Pt. Loma (MAP-04)  
(2) BOWTS Evacuation Floor Plan, Naval Submarine Base Pt. Loma (MAP-05)  
(3) Map Symbols Chart (MAP-02)  
(4) Emergency Contacts and Telephone Numbers, Naval Submarine Base Pt. Loma (OTH-94)  
(5) Hazardous Material Spill Report Form (OTH-65)

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## 1. PURPOSE

To establish a hazardous material spill contingency and emergency response plan to provide standardized procedures for Operator personnel to respond to hazardous substance releases and emergency situations at the Naval Base Point Loma (NBPL or SUBASE) Bilge and Oily Wastewater Treatment System (BOWTS) facility (including treatment facility and all ancillary equipment, pump stations, piping, and pier risers) headquartered in Building 2004.

## 2. ACTION

This document applies to all Operator personnel at the NBPL BOWTS under Environmental Services Contract.

A copy of this plan is maintained on file at the NBPL BOWTS office (Building 2004) and Environmental Office (Building 1606, Naval Base Coronado North Island). Operators and management personnel responsible for implementation of this plan will review and document that they are familiar with this plan.

Copies of this SOP have been provided to:

- The subject matter expert (the residual organization or successor entity)
- Federal Fire Department – NBPL
- Base Security
- Scripps Mercy Hospital, 4077 Fifth Avenue, San Diego, CA 92103
- Command Duty Officer Desk

### 3. SCOPE

This standard operating procedure (SOP) has been developed to meet the requirements of Title 19, California Code of Regulations, Title 22, California Code of Regulations, as well as California Health and Safety Code Chapters 6.5 and 6.95, **(References a through e)** as applicable to the operations conducted by Operators under Environmental Services Contract. The plan describes the actions that BOWTS personnel shall take in response to fire, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.

### 4. BACKGROUND

The United States Naval Base Point Loma is a limited-access facility that operates 24 hours a day, seven days a week. The Navy Submarine Support Facility was established in November 1963 on 280 acres of the land. Entrances to the installation include two gates located off Rosecrans Street in Point Loma. The facility is located at Rosecrans Street and Kenthart Road. NBPL provides pierside berthing and support services for submarines of the U.S. Pacific Fleet and is the site of the Navy Alcohol Rehabilitation Center. Eight attack submarines, one submarine tender, and one floating dry-dock are homeported at the base.

Under Environmental Services Contract, Operator provides treatment and management of bilge and oily wastewater. The treatment facility, known as BOWTS, is located on Rosecrans Street in the southern part of Naval Submarine Base, Point Loma. The treatment facility, which is fully enclosed in a cement concrete berm, consists of feed pumps, oil-water separators, influent and recovered oil storage tanks, and associated piping.

Oily waste is initially pumped from the submarine's bilge space into subsurface vaults located at the pier head and is then transferred into two 20,000-gallon load equalization tanks (LETs) for settling. The surface of the LET is skimmed and the recovered oil is transferred into a 5025-gallon Recovered oil tank (ROT). The remaining oil-water mixture in the LET is fed to an oil-water separator, which removes the oil and sludge from the wastewater. The recovered oil is transferred to the ROT and the sludge is transferred to a 2,000-gallon holding tank for processing by a dewatering system. The remaining wastewater is transferred to an induced air flotation (IAF) unit. The IAF unit combines the remaining wastewater with microscopic air bubbles at the bottom of a vessel causing oil droplets and solids to float to the surface, forming a frothy foam. The foam is skimmed and transferred to the sludge holding tank and the clean wastewater is discharged to the sewer. The sludge is de-watered and the dry sludge cake is processed as hazardous waste. The recovered oil is managed as hazardous waste and is shipped under a hazardous waste manifest to Naval Air Station North Island (NASNI) Oil Recovery Plant (ORP). A 40,000-gallon subsurface emergency containment structure is provided as secondary containment.

#### 4.1 Arrangements with Local Authorities

The BOWTS is a Navy-owned facility. Federal Fire conducts regular inspections at the facility and has been provided information regarding the facility operations and hazardous materials. Base Security also has access to the facility and has been provided copies of this plan. Additionally, the Navy has entered into a Mutual Aid Agreement with City of San Diego, the San Diego Fire Department, and the City of Coronado to respond to emergencies, if needed.

Scripps Mercy Hospital in San Diego (4077 Fifth Avenue) has been contacted and provided information regarding the hazardous materials handled at the facility and the types of injuries and illnesses that could result from facility operations.

## 5. PROCEDURE

### 5.1 General Evacuation Procedures

In the event of an emergency, employees will be notified to evacuate the facility by shouting or by use of a device such as a personnel hazard alarm (air horn). Employees will evacuate via the nearest safe exit and meet at the staging area designated on the site-specific plans and maps found in **Enclosures 1, 2, and 3.** (outside BOWTS gate) Employees will take the current operator and radio logs with them when they evacuate. The Emergency Coordinator, alternate Emergency Coordinator, Lead Operator, or, in their absence, the discoverer assumes responsibility to effect evacuation and coordinate response (which may simply be to remain in the staging area) until the Federal Fire Department arrives.

### 5.2 Notification Procedures

In the event of a fire, an explosion, or a release or potential release of hazardous materials/waste at the BOWTS, the Federal Fire Department and the Utilities Duty Desk shall be notified.

1. **Federal Fire Department.** (Telephone Number on base: 9-911). Federal Fire Department is the designated first responder and is to be contacted in the event of any emergency. Upon notification/arrival on scene, the Federal Fire Department response person becomes the Emergency Coordinator and is responsible for coordinating all emergency response efforts. This responsibility includes ambulance dispatch and communication with Navy medical centers, local police departments, and local fire departments.
2. **IN WATER SPILLS – Port Operations Officer.** Telephone Number (619) 553-0134 or (619) 553-9785 after work hours. In-the-water spills shall be reported to the Port Operations Officer and Central Oil Recovery at (619) 556-8006.
3. **Commanding Officer – Naval Base Point Loma through the CDO.** Notify the CDO at 619-726-7423.
4. **Commander Navy Region Southwest Installation Program Director Office (CNRSW).** The CNRSW environmental staff is responsible for oversight regarding both internal and external reporting. The CNRSW telephone numbers are as follows:
  - CNRSW Environmental NBPL Site Team Office: (619) 553-8566.
5. **Utilities/NAVFACSW Duty Desk.** If the emergency situation requires utility services outage or affects utility services, contact the Utilities/NAVFACSW Duty Desk at 619-556-7349.
6. **NAVFAC Environmental Services Representative.** Contact the Residual Organization (RO) representative at 619-571-4175 within 30 minutes after contacting Federal Fire.
7. **Clean Harbors. Telephone Number (619) 545-6520. Clean Harbors has been** contracted by Operator to assist with any cleanup activity. BOWTS operations

personnel will contact Clean Harbors to assist in any cleanup activity deemed necessary.

8. **Operator Management Notifications.** The BOWTS operators shall immediately notify Operator management personnel of all emergencies. Individuals reporting releases or potential releases shall provide the information listed below. The information is used to prepare the Hazardous Material Spill Report (**Enclosure 5**) and to arrange for additional personnel and material assets required to contain and clean up releases. For releases occurring after hours, the Lead Operator shall provide the following information on the next business day.
- The name of the person reporting.
  - The name of the hazardous substance released; i.e., if oil, specify type, estimate percentage of oil/water mixture, describe unknown substances fully (color, viscosity, odor, etc.).
  - The quantity of hazardous materials/waste released or that could potentially be released.
  - Date and time that the spill occurred, and duration, if applicable.
  - The exact location of the release or potential release (i.e., base, building or pier number, area of building [north side, southeast corner]), media affected (i.e., air, water, soil).
  - The potential hazard presented by the release, including health and environmental (if known).
  - Cause of the release. Provide details as to container type, operations being conducted at the time, etc.
  - Conditions at the release site. If it is an oil release to water, include slick size, direction, movement and speed, wind direction and speed.
  - Actions taken and other actions planned (i.e., samples taken, release contained, etc.); if no action has been taken then state reasons.

This information shall be recorded on the Hazardous Material Spill Report (**Enclosure 5**).

The Emergency Coordinator will contact the necessary agencies in accordance with the Red Plan.

9. **State Office of Emergency Services:** The State Office of Emergency Services (800-852-7550) is to be notified immediately upon determination that a release or emergency situation requiring notification has occurred. The Emergency Coordinator is to assure that the required notifications are made.

**NOTE:** *Discharges of hazardous materials to secondary containment and hazardous material discharges controlled on site are not considered releases. As such, discharges of this nature do not activate this contingency plan and may not be subject to the notification requirements outlined in 22 CCR §66264.56.*

Refer to the Red Plan for further agency notification requirements.

## 5.3 Emergency Procedures

### 5.3.1 General Procedures

The following general procedures should be followed for all BOWTS emergencies:

1. Remain calm. Take time to evaluate the situation; think it through and decide the next course of action. **Personnel safety will be your paramount guideline.**
2. Discontinue all waste-receiving operations and de-energize all processing equipment if it is safe to do so. Alert others nearby of the emergency and ask them to get help and/or call for necessary assistance.
3. Evacuate the area. Ensure that all unnecessary and uninvolved personnel are clear of the problem area.
4. If safe, rescue all injured personnel. Decontaminate if necessary.
5. If safe, control or contain any spill or leak of hazardous material.
6. When the emergency has been resolved, evaluate the incident and the responses to determine if there were any lessons to be learned.

### 5.3.2 Fire

Employees will evacuate per the procedures described in Section 5.3.1. The Emergency Coordinator or Supervisor will contact the Federal Fire Department (9-911). If safe, the supervisor or in-house trained personnel will secure all power, close windows and doors (administration spaces), and attempt to control the fire using an appropriate fire extinguisher agent. Other hazardous materials should be relocated to avoid exposure to the fire or excess heat and to facilitate fire department access to burning materials. First aid or CPR should be used on injured individuals as needed until medical assistance arrives. All visitors and personnel not directly involved in fire fighting shall remain clear of the scene. The BOWTS supervisor shall provide information and assistance, as needed, to fire fighters and other emergency responders.

### 5.3.3 Release or Potential Release of Hazardous Materials/Waste

The Supervisor or Emergency Coordinator will determine if in-house personnel are able to control and contain a hazardous material/waste release. Materials such as absorbent, shovels, brooms, and 55-gallon drums will be used for spill containment and cleanup. **PERSONNEL WHO DO NOT HAVE THE PROPER TRAINING AND PROTECTIVE EQUIPMENT WILL NOT PARTICIPATE IN HAZARDOUS MATERIAL SPILL CLEANUP. PERSONNEL SAFETY WILL BE A PRIME CONSIDERATION AT ALL TIMES.** If the Supervisor or Emergency Coordinator determines that the release or potential release is too large for in-house personnel, the facility will be evacuated per Section 5.1 and notification procedures will begin. Upon arrival of the Federal Fire Department, BOWTS personnel will stand by to assist as required and requested.

### 5.3.4 Equipment and Facilities

The BOWTS will maintain the following emergency equipment at each site. Communications and alarm systems, fire protection equipment, spill control equipment, and decontamination equipment shall be tested or inspected and maintained per manufacturer's instructions. The location of the below-listed emergency equipment is shown on the Evacuation Floor Plan (**Enclosure 2**).

- ABC fire extinguishers

- Absorbent for spill control and cleanup
- Shovels, brooms, and dust pans
- Containers
- Communications Equipment
- Alarms (Fire and personnel hazard warning)
- Eye Wash and Shower
- Personal Protective Equipment
- First Aid Kit

## 5.4 Duties and Responsibilities

### 5.4.1 Emergency Coordinator

Each facility that accumulates hazardous waste and/or maintains hazardous material inventories over the Threshold Planning Quantities has designated employees to be the Emergency Coordinators. These employees have the authority and responsibility for coordinating all emergency response measures and have the authority to commit the resources needed to carry out the requirements of this plan.

The names of persons qualified to be the Emergency Coordinators are provided in **Enclosure 4**. If not included in **Enclosure 4**, Emergency Coordinator home telephone numbers are provided on a separate list maintained by the Utility Duty Desk.

**Emergency Coordinator's Duties**—In the event of a release of hazardous materials/waste, a fire, or any other emergency, the Emergency Coordinator will do the following:

- Identify the nature of the problem and appropriate actions to be taken.
- Notify required personnel of any danger using the procedures listed herein.
- Coordinate and direct trained Operator personnel regarding proper control and cleanup of the release.
- Notify Federal Fire Department as required by the nature of the problem or emergency.
- Report the spill as specified in this plan and **Reference (g)**.
- Coordinate with the CNRSW environmental staff to provide all necessary clean up, disposal, and reporting information to ensure compliance with the applicable laws and regulations.

### 5.4.2 Industrial and Oily Waste Operations Manager

The Industrial and Oily Waste Operations Manager shall perform the following:

- Ensure that all BOWTS personnel receive proper and adequate training in hazardous substance spill response/cleanup and BOWTS general emergency procedures.
- Ensure that required personal protective equipment is available and used by all personnel involved in emergency response/spill cleanup operations.

- Ensure that BOWTS emergency equipment is properly maintained, adequately stocked, and in good working order.
- Ensure that communication systems including fire alarms, radios, telephones, and personnel notification devices, are in working order.
- Ensure that all employees are thoroughly familiar with the contents of this SOP.
- Conduct regular stand-up training to discuss emergency procedures.
- Be familiar with the duties of the Emergency Coordinator and function as such when required.
- Ensure that emergency actions and spill cleanups are conducted in accordance with **References (a) through (g)** and this SOP.
- For incidents requiring activation of this plan, the Emergency Coordinator shall ensure that a written report is submitted to the Department of Toxic Substances Control in accordance with Title 22, California Code of Regulations, Chapter 14, Article 4, within 15 days after the incident. Written reports must be reviewed by CNRSW and RO offices prior to agency submittal.

#### 5.4.3 BOWTS Operators

BOWTS Operators shall do the following:

- Familiarize themselves with the contents of this SOP and **References (a) through (e)**.
- Ensure that all required personal protective equipment is worn when handling hazardous substances or engaged in spill cleanup activities.
- Follow the directions and guidance of the Emergency Coordinator involved in emergency situations and hazardous substance spill cleanup.
- Stand by to assist other response agencies as requested.
- Attend emergency procedure and spill response/cleanup training as directed by the BOWTS supervisor.
- Carry portable radios at all times, and ensure that batteries are charged and the radio is fully functional.

#### 5.5 Reporting Requirements

Internal reporting per Instruction 5090 (**References f and g**) is required for all spills. Federal, state, and local regulations require reporting of hazardous material spills under certain conditions. Refer to the most recent version of the Hazardous Material Spill Report (**Enclosure 5**) for information required for hazardous material spill reporting. The following is a summary of requirements.

- No external agency spill reporting is required for spills at the BOWTS that are completely contained and cleaned up on site, unless directed by the BOWTS supervisor.
- All oil spills and reportable quantity hazardous substance releases at the BOWTS that are not completely contained and cleaned up, and which migrate off site, must be reported in accordance with **References (f) and (g)**.

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# Standard Operating Procedure IWOW-066

**TITLE: Hazardous Material Spill Contingency and Emergency Response Plan – Bilge and Oily Wastewater Treatment System, Naval Amphibious Base Coronado, San Diego**

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**References:** (a) Title 40, Code of Federal Regulations  
(b) Title 22, California Code of Regulations  
(c) Title 19, California Code of Regulations  
(d) California Health & Safety Code, Chapter 6.5  
(e) California Health & Safety Code, Chapter 6.95  
(f) COMSC INSTRUCTION 5090.1 (Series) – Oil and Hazardous Substances Pollution Contingency Plan  
(g) COMSC INSTRUCTION 5090.2 (Series) – Hazardous Material Spill Reporting

**Enclosures:** (1) BOWTS Site Map, Naval Amphibious Base Coronado (MAP-06)  
(2) BOWTS Evacuation Floor Plan, Naval Amphibious Base Coronado (MAP-07)  
(3) Map Symbols Chart (MAP-02)  
(4) Emergency Contacts and Telephone Numbers (OTH-95)  
(5) Hazardous Material Spill Report Form (OTH-65)

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## 1. PURPOSE

To establish a hazardous material spill contingency and emergency response plan to provide standardized procedures for Operator personnel to respond to hazardous substance releases and emergency situations at the Naval Amphibious Base (NAB) Coronado, Bilge and Oily Wastewater Treatment System (BOWTS) facility (including treatment facility and all ancillary equipment, pumps, piping to pier risers, air compressor) headquartered in Building 333.

## 2. ACTION

This document applies to all Operator personnel at the Naval Amphibious Base BOWTS under Environmental Services Contract.

A copy of this plan is maintained on file at the NAB BOWTS office (Building 333) and Environmental Office (Building 1606, Naval Base Coronado North Island). Operators and management personnel responsible for implementation of this plan will review and document that they are familiar with this plan.

Copies of this SOP have been provided to:

- The Subject Matter Expert (the NAVFAC Environmental Services or successor entity)
- Federal Fire Department – Naval Base Coronado (NAB & NBCNI)
- Base Security
- Sharp Coronado Hospital, 250 Prospect Pl, Coronado, CA 92118
- CDO Desk

### 3. SCOPE

This standard operating procedure (SOP) has been developed to meet the requirements of Title 19, California Code of Regulations, Title 22, California Code of Regulations, as well as California Health And Safety Code, Chapters 6.5 and 6.95 (**Reference a** through **e**), as applicable to the operations conducted by Operator under Environmental Services Contract. The plan describes the actions that BOWTS personnel shall take in response to fire, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.

### 4. BACKGROUND

The United States Naval Amphibious Base Coronado (or NAB Coronado) is a limited-access facility that operates 24-hours a day, seven days a week. It is located along the Silver Strand between the San Diego Bay and the Pacific Ocean. The land was acquired by the U.S. Navy in 1943 to use as an Amphibious Training Base. Entrance to the installation includes two gates located off Highway 75 at Guadalcanal Road and Rendova Road in Coronado. NAB Coronado houses Commander Naval Surface Force, U.S. Pacific Fleet, responsible for the training, maintenance, and crews of the approximately 90 ships of the Pacific Fleet and commander Naval Special Warfare Command, U.S. Pacific Fleet.

Operator, under Environmental Services Contract, provides treatment and management of on-site generated and oily wastewater and vaulted tank serving Building 346. The treatment facility, known as BOWTS, is located on Tarawa Road at Makin Road in the northern part of NAB Coronado. The treatment facility, which is fully enclosed in a cement concrete berm, consists of feed pumps, oil-water separators, influent and recovered oil storage tanks, and associated piping.

Oily waste, which is received from Ship's/boats bilge space, is initially pumped into pier vaults and then into an 8,000-gallon load equalization tank (LET) for settling. The surface of the LET is skimmed and the recovered oil is transferred into a 1,000-gallon tank (slop oil tank). The remaining oil-water mixture in the LET is fed to an oil-water separator, which removes the oil and sludge from the wastewater. The recovered oil is transferred to the slop oil tank, and the sludge is transferred to a 500-gallon holding tank for processing by a dewatering system. The recovered oil is managed as hazardous waste and shipped under a hazardous waste manifest to the Naval Air Station North Island (NBCNI) Oil Recovery Plant (ORP).

#### 4.1 Arrangements with Local Authorities

The BOWTS is a Navy owned facility. Federal Fire conducts regular inspections at the facility and has been provided information regarding the facility operations and hazardous materials. Base Security also has access to the facility and has been provided copies of this plan. Additionally, the Navy has entered into a Mutual Aid Agreement with City of San Diego, the San Diego Fire Department, and the City of Coronado to respond to emergencies if needed.

Sharp Coronado Hospital in Coronado has been contacted and provided information regarding the hazardous materials handled at the facility and the types of injuries and illnesses that could result from facility operations.

### 5. PROCEDURE

#### 5.1 General Evacuation Procedures

In the event of an emergency, employees will be notified to evacuate the facility by shouting or by use of a device such as a personnel hazard alarm (air horn). Employees

will evacuate via the nearest safe exit and meet at the staging area designated on the site-specific plans and maps found in **Enclosures 1, 2, and 3.** (outside BOWTS across Tarawa Road) The Emergency Coordinator, alternate Emergency Coordinator, Lead Operator, or in their absence, the discoverer assumes responsibility to effect evacuation and coordinate response (which may simply be to remain in the staging area) until the Federal Fire Department arrives.

## 5.2 Emergency Notification Procedures

In the event of an emergency situation (fire, explosion, injury, release or threatened release of hazardous material), the Emergency Coordinator, alternate Emergency Coordinator, Lead Operator, or in their absence, the discoverer will notify the following:

1. **Federal Fire Department**, (Telephone Number on base: 9-911). Federal Fire Department is the designated first responder and is to be contacted in the event of any emergency. Upon notification/arrival on scene, the Federal Fire Department response person becomes the Emergency Coordinator and is responsible for coordinating all emergency response efforts. This responsibility includes ambulance dispatch and communication with Navy medical centers, local police departments, and local fire departments.
2. **IN WATER SPILLS - Port Operations Officer**, Telephone Number (619) 279-1255. In-the-water spills shall be reported to the Port Operations Officer and Central Oil Recovery at (619) 556-8006.
3. **Commanding Officer – Naval Base Coronado through the Command Duty Officer (CDO)**. Notify the CDO at (619)-778-4862.
4. **Commander Navy Region Southwest Installation Program Director Office (CNRSW)**. The CNRSW Environmental staff is responsible for oversight regarding both internal and external reporting. The CNRSW telephone numbers are as follows:
  - CNRSW Environmental NAB Site Team Office: (619) 545-4944.
5. **Utilities/NAVFACSW Duty Desk**: If the emergency situation requires utility services outage or effects utility services, contact the Utilities/NAVFACSW Duty desk at (619) 556-7349.
6. **NAVFAC Environmental Services Representative**: Contact the Residual Organization (RO) representative at (619) 571-4175 within 30 minutes after contacting Federal Fire
7. **Clean Harbors**: (Telephone Number (619) 545-6520). Clean Harbors has been contracted by Operator to assist with any cleanup activity. All personnel will contact Clean Harbors to assist in any cleanup activity deemed necessary.
8. **Management Notifications**. The BOWTS operators shall immediately notify Management personnel of all emergencies. Individuals reporting releases or potential releases shall provide the information listed below. The information is used to prepare the Hazardous Material Spill Report (**Enclosure 5**) and to arrange for additional personnel and material assets required to contain and clean up releases. For releases occurring after hours, the facility supervisor shall provide the information requested below, on the next business day.
  - The name of the person reporting.

- The name of the hazardous substance released; if oil, specify type, estimate percentage of oil/water mixture, describe unknown substances fully (color, viscosity, odor, etc.).
- The quantity of hazardous materials/waste released, or that could potentially be released.
- Date and time that the spill occurred and duration, if applicable.
- The exact location of the release or potential release (i.e., base, building or pier number, area of building [north side, southeast corner]), media affected (i.e., air, water, soil).
- The potential hazard presented by the release, including health and environmental (if known).
- Cause of the release. Provide details as to container type, operations being conducted at the time, etc.
- Conditions at the release site. If it is an oil release to water, include slick size, direction, movement and speed, and wind direction and speed.
- Actions taken and other actions planned (i.e., samples taken, release contained, etc.); if no action has been taken, state the reasons.

This information shall be recorded on the Hazardous Waste Spill Report Form (**Enclosure 5**).

The Emergency Coordinator will contact the necessary agencies in accordance with the Red Plan.

9. **State Office of Emergency Services:** The State Office of Emergency Services (800-852-7550) is to be notified immediately upon determination that a release or emergency situation requiring notification has occurred. The Emergency Coordinator is to assure that the required notifications are made.

**NOTE:** *Discharges of hazardous materials to secondary containment and hazardous material discharges controlled on site are not considered releases. As such, discharges of this nature do not activate this contingency plan and may not be subject to the notification requirements outlined in 22 CCR §66264.56.*

**Copies of this Plan:** A copy of this plan is maintained on file at the Commander Navy Region Southwest (CNRSW) Installation Program Director Office, the BOWTS office (Building 3588/3589, NAVSTA), Operator Environmental Office (Building 1606, NBCNI), Federal Fire Department, the Duty Desk, and the San Diego County Department of Environmental Health, Hazardous Materials Division.

Refer to the Red Plan for further agency notification requirements.

### 5.3 Emergency Procedures

#### 5.3.1 General Procedures

The following general procedures should be followed for all BOWTS emergencies:

1. Remain calm. Take time to evaluate the situation; think it through and decide the next course of action. **Personnel safety will be your paramount guideline.**

2. Discontinue all waste-receiving operations and de-energize all processing equipment if it is safe to do so. Alert others nearby of the emergency and ask them to get help and/or call for necessary assistance.
3. Evacuate the area. Ensure that all unnecessary and uninvolved personnel are clear of the problem area.
4. If safe, rescue all injured personnel. Decontaminate if necessary.
5. If safe, control or contain any spill or leak of hazardous material.
6. When the emergency has been resolved, evaluate the incident and the responses to determine if there were any lessons to be learned.

### 5.3.2 Fire

Employees will evacuate per the procedures described in Section 5.3.1. The Emergency Coordinator or Supervisor will contact the Federal Fire Department (9-911). If safe, the supervisor or in-house trained personnel will secure all power, close windows and doors (administration spaces), and attempt to control the fire using an appropriate fire extinguisher agent. Other hazardous materials should be relocated to avoid exposure to the fire or excess heat and to facilitate fire department access to burning materials. First aid or CPR should be used on injured individuals as needed until medical assistance arrives. All visitors and personnel not directly involved in fire fighting shall remain clear of the scene. The BOWTS supervisor shall provide information and assistance, as needed, to fire fighters and other emergency responders.

### 5.3.3 Release or Potential Release of Hazardous Materials/Waste

The Supervisor or Emergency Coordinator will determine if in-house personnel are able to control and contain a hazardous material/waste release. Materials such as absorbent, shovels, brooms, and 55-gallon drums will be used for spill containment and cleanup. PERSONNEL WHO DO NOT HAVE THE PROPER TRAINING AND PROTECTIVE EQUIPMENT WILL NOT PARTICIPATE IN HAZARDOUS MATERIAL SPILL CLEANUP. PERSONNEL SAFETY WILL BE A PRIME CONSIDERATION AT ALL TIMES. If the Supervisor or Emergency Coordinator determines that the release or potential release is too large for in-house personnel, the facility will be evacuated per Section 5.1, and notification procedures will begin. Upon arrival of the Federal Fire Department, BOWTS personnel will standby to assist as required and requested.

### 5.3.4 Equipment and Facilities

The BOWTS will maintain the following emergency equipment at each site. Communications and alarm systems, fire protection equipment, spill control equipment, and decontamination equipment shall be tested or inspected and maintained per manufacturer's instructions. The location of the below-listed emergency equipment is shown on the Evacuation Floor Plan (**Enclosures 2 and 3**).

- ABC fire extinguishers
- Absorbent for spill control and cleanup
- Shovels, brooms, and dust pans
- Containers
- Communications Equipment
- Alarms (Fire and personnel hazard warning)

- Eye Wash and Shower
- Personal Protective Equipment
- First Aid Kit

## 5.4 Duties and Responsibilities

### 5.4.1 Emergency Coordinator

Each facility that accumulates hazardous waste and/or maintains hazardous material inventories over the Threshold Planning Quantities has designated employees to be the Emergency Coordinators. These employees have the authority and responsibility for coordinating all emergency response measures and have the authority to commit the resources needed to carry out the requirements of this plan.

The names of persons qualified to be the Emergency Coordinators are found in **Enclosure 4**. If not included in **Enclosure 4**, Emergency Coordinator home telephone numbers are provided on a separate list maintained by the Utility Duty Desk.

**Emergency Coordinators' Duties**—In the event of a release of hazardous materials/waste, a fire, or any other emergency, the Emergency Coordinator(s) will do the following:

- Identify the nature of the problem and appropriate actions to be taken.
- Notify required personnel of any danger, using the procedures listed herein.
- Coordinate and direct trained Operator personnel regarding proper control and cleanup of the release.
- Notify Federal Fire Department as required by the nature of the problem or emergency.
- Report the spill as specified in this plan and **Reference (g)**.
- Coordinate with CNRSW environmental staff to provide all necessary clean up, disposal, and reporting information to ensure compliance with the applicable laws and regulations.

### 5.4.2 Bilge and Oily Waste Operations Manager

The Bilge and Oily Waste Operations Manager shall perform the following tasks:

- Ensure that all BOWTS personnel receive proper and adequate training in hazardous substance spill response/cleanup and BOWTS general emergency procedures.
- Ensure that required personal protective equipment is available and used by all personnel involved in emergency response/spill cleanup operations.
- Ensure that BOWTS emergency equipment is properly maintained, adequately stocked, and in good working order.
- Ensure that communication systems, including fire alarms, radios, telephones, and personnel notification devices are in working order.
- Ensure that all employees are thoroughly familiar with the contents of this SOP.
- Conduct regular stand-up training to discuss emergency procedures.

- Be familiar with the duties of the Emergency Coordinator and function as such, when required.
- Ensure that emergency actions and spill cleanups are conducted in accordance with **References (a)** through **(g)**, and this SOP.
- For incidents requiring activation of this plan, the Emergency Coordinator shall ensure that a written report is submitted to the Department of Toxic Substances Control in accordance with Title 22, California Code of Regulations, Chapter 14, Article 4, within 15 days after the incident. Written reports must be reviewed by CNRSW and RO offices prior to agency submittal.

#### 5.4.3 BOWTS Operators

BOWTS Operators shall conduct the following activities:

- Familiarize themselves with the contents of this SOP and **References (a)** through **(e)**.
- Ensure that all required personal protective equipment is worn when handling hazardous substances or engaged in spill cleanup.
- Follow the directions and guidance of the Emergency Coordinator involved in emergency situations and hazardous substance spill cleanup.
- Stand-by to assist other response agencies as requested.
- Attend emergency procedure and spill response/cleanup training as directed by the BOWTS supervisor.
- Carry portable radios at all times, and ensure that batteries are charged and the radio is fully functional.

#### 5.5 Reporting Requirements

Internal reporting per Instruction 5090 (**References f** and **g**) is required for all spills. Federal, state, and local regulations require reporting of hazardous material spills under certain conditions. Refer to the most recent version of Instruction 5090.2, Hazardous Material Spill Report (**Enclosure 5**) for information required for hazardous material spill reporting. The following is a summary of requirements.

- No external agency spill reporting is required if spills at the BOWTS are completely contained and cleaned up on site, unless directed by the BOWTS supervisor.
- All oil spills and reportable quantity hazardous substance releases at the BOWTS that are not completely contained and cleaned-up, and which migrate off-site, must be reported in accordance with **References (f)** and **(g)**.

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# Standard Operating Procedure IWOW-067

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## TITLE: IWOW Waste Profiling for Acceptable Wastes

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**Reference:** (a) California Code of Regulations, Title 22, Section 66264.13  
(b) SOP IWOW- 021 "Waste Acceptance Procedure and Criteria: Industrial Waste"  
(c) SOP IWOW-020 "Waste Acceptance Criteria for Bilge and Oily Waste Treatment Systems"  
(d) SOP IWOW-022 "Waste Acceptance Form"  
(e) HWF Permit Waste Analysis Plan  
(f) Environmental Waste Billing and Tracking (EWBATS) Database

**Enclosure:** (1) Master EWBATS Bulk Profile List (OTH-68)  
(2) Waste Acceptance Form (OTH-05)  
(3) Waste Profile Form (OTH-70)  
(4) Generator Profile Update and Certification Form (OTH-69)  
(5) Generator Profile Cross-Reference to EWBATS Bulk Profile List and WAP Waste Stream (OTH-72)

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### 1. PURPOSE

To provide guidance on compiling, reviewing, creating, and updating generator waste profiles for wastes accepted into the Industrial Waste Treatment Plant (IWTP), the Oil Recovery Plant (ORP), and Bilge and Oily Waste Treatment Systems (BOWTS). Generator waste profiles are compiled for repetitively generated waste streams to facilitate acceptance for treatment.

### 2. ACTION

IWOW Personnel

### 3. QUALIFICATION AND TRAINING REQUIREMENTS

At a minimum, all staff responsible for implementing work covered by this SOP must read and understand its contents and sign a Document Review Training Record.

### 4. PROCEDURE

Bulk deliveries of hazardous and non-hazardous waste are received at the IWTP/ORP and BOWTS (or referred to as the IWOW facilities) from a variety of sources. The IWOW facilities receive wastes from routine industrial process and maintenance activities and direct piping of oily and general industrial waste.

For waste accepted into the ORP or BOWTS, generator waste characterization documentation on wastes received are maintained in the facility logs. A Waste Acceptance Form (WAF) (**Enclosure 2**) must accompany all shipments. NBCNI ORP is the only oil recovery system that can accept hazardous waste manifest from off-site. BOWTS facilities (NBSD, NBPL and NAB) are only permitted to accept oily wastewaters from on-site or non-hazardous wastes (accompanied by laboratory analytical) on a non-hazardous waste manifest. Consult with the Plant Chemist/Operations Officer or Environmental Protection Specialist (EPS) for more detail.

For each industrial waste (IW) batch treatment, the IWTP maintains a file of generator waste characterization documentation on wastes received from its customers. The documentation is a

Waste Acceptance Form (WAF) (**Enclosure 2**) for shipments of on-site waste, and a hazardous waste manifest for shipments of off-site waste (with the exception of general industrial waste from wash racks and storm water drainage, and waste water from the laundry that is piped directly into the ORP).

Each WAF identifies the generator waste characterization information for the waste and an existing EWBATS bulk profile for the waste (**Enclosure 1**), or is accompanied with analytical data or other documentation of generator knowledge. This knowledge may be documented by any or all of the following:

- a. Generator knowledge of the products and materials that comprise the waste stream, based on a MSDS/SDS and knowledge of the waste-generating process.
- b. Generator certification statement based on their knowledge of the waste generation process from historical documents, data, and knowledge.
- c. Analytical data.

Some generator wastes treated at the IWTP have waste characterization data that are based on their knowledge of process and analytical data (e.g., FRC). Based on the waste characterization results, the waste is assigned a bulk profile number. The IWOW Operator will confirm the bulk profile number for bulk wastes based on field tests on each waste shipment that is received at the plant. This bulk profile number is recorded on the WAF.

General industrial waste generated at NBCNI can be piped directly to the ORP. This waste is non-hazardous and has been assigned a EWBATS bulk profile number and is not required to have a WAF. The EWBATS waste profile number for this waste is maintained in the IWOW profile files. Oily waste/bilge water generated at NBCNI, NBSD, NBPL or NAB piped directly to the ORP/BOWTS does not require a WAF. This waste is hazardous and has been assigned an EWBATS bulk profile number.

#### 4.1 Generator Waste Characterization Updates

The IWOW accepts waste based on generator waste characterization data that is subject to field verification and periodic analytical confirmation. The IWTP requires that generators update the waste characterization data for the following conditions:

- a. The process or operation generating the waste has changed.
- b. Product formulations or products that affect the waste-generating process have changed (based on MSDS/SDS), as applicable to the profile basis.
- c. Field testing or new analytical data results do not match the established profile. (See Section 4.3.2).

If analytical data is an update to existing waste characterization data, the Operator team will update their bulk profile files and document the changes as part of the facility operations records.

#### 4.2 New Bulk Profile Assignment and Approval

The IWOW Manager or designee (typically an Environmental Protection Specialist [EPS]) reviews the new waste characterization data as the need is identified. These waste characterization data sheets must be based on documented knowledge of the generating process, and that process must be repetitive and uniform enough that a variability range can be established.

A new waste characterization data sheet must be based on reviews of analytical data or other generator documentation (such as MSDS documents, generator process, etc.) to determine whether the waste stream can be assigned to the appropriate existing bulk profile number or whether a new bulk profile should be created (**Enclosure 3**). The generator will be requested to provide enough information so that the IWOW Manager or designee may confirm that the waste stream is adequately

characterized (MSDS/SDS, generator interview on generating process, and/or analytical data). The following process will be used:

- a. The IWOW Manager or designee will consult with the Project Chemist/Operations Officer to identify what analytical tests are needed to adequately characterize the waste.
- b. The IWOW Manager or designee will review waste characterization information to ensure that proper EPA and/or California waste identification numbers have been assigned.
- c. The IWOW Manager or designee will develop a new generator waste characterization data sheet.
- d. Once the generator waste characterization data sheet is developed by Operator, a hard copy will be given to the RO for review and approval. The RO will determine the appropriate PWC bulk profile number. The RO will determine the pricing and type service for a new bulk profile and will enter the profile information into EWBATS.
- e. Once in EWBATS, management will provide training to their staff and update their profile books.

### 4.3 Bulk Profile Management:

The IWOW Manager or designee will maintain the bulk profiles in the IWOW central files. Operator will organize the files by bulk profile and will include the waste characterization data information for each bulk profile.

The IWOW Manager or designee will maintain a spreadsheet that lists the generator name, generator waste characterization information, bulk profile number, waste stream, and the analytical testing date. The IWOW Manager will use this spreadsheet to manage the bulk profile information. This will allow a cross-reference between the generator profile and the WAP waste stream.

#### 4.3.1 Bulk Profile Management Review

Operator will review the bulk profiles annually. The IWOW Manager or designee will review waste characterization analytical data or other generator knowledge documentation to verify the following:

- a. The generator waste characterization data accurately reflects the analytical data and the appropriate EPA and State Waste ID Codes.
- b. The generator process has not changed.
- c. The bulk profile number associated with the generator waste characterization data accurately assigns the appropriate EPA and State Waste ID Codes.
- d. Profile cross-reference lists are appropriate based on analytical data, waste name, and waste ID codes.

#### 4.3.2 Waste Characterization Review

All IWTP/ ORP and BOWTS wastes received by tanker truck will be visually inspected and one sample from each bulk profile (upon availability) each day will be field-tested to confirm proper waste characterization in accordance with SOP **IWOW-021**. The specific field verification tests are listed in **Table 2**. Field tests are used as a screening tool to verify that generator waste characterization has accurately represented key information for waste processing optimization and control, including assignment to waste processing tanks and exclusion of chemicals that could interfere with waste treatment to meet publicly-owned treatment works (POTW) discharge limits.

#### 4.3.3 Generator Waste Characterization Certification

Generators with established waste characterization data will be required to recertify their waste profiles every year by submitting a Generator Update and Certification Form (**Enclosure 4**). The generator's signature on the waste characterization data sheet documents their knowledge of the waste characteristics of their waste stream. The generator may elect to provide new analytical data in support of the recertification, or base the certification on process knowledge if field verification tests or waste characterization reviews indicate discrepancies with generator waste characterization on file. **Enclosure 5** provides a "Generator Profile Cross-Reference to EWBATS Bulk Profile List and WAP Waste Stream".

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# STANDARD OPERATING PROCEDURE IWOW-068

**TITLE: Overall Operating Procedures at NAB BOWTS**

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**Reference:** (a) SOP IWOW-006 "Industrial and Oily Waste (IWOW) Treatment Facility Inspections"  
(b) SOP IWOW-003 "Transfer of Oily Waste from Vessel to the Pier Oily Waste Riser or Tanker Truck"  
(c) SOP IWOW-004 "Industrial and Oily Waste Treatment Systems Operation Checklist"

**Enclosures:** (1) NAB BOWTS Layout (DRW-06)  
(2) Oily Waste Transfer from Piers to BOWTS – NAB (OTH-81)  
(3) NAB Oily Waste Transfer Log (OTH-81A)  
(4) PPE Requirements for Specific Operations/Tasks (OTH-01)

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## 1. PURPOSE

The purpose of this SOP is to define the operational process for transferring, processing, and disposing of oily wastewater received at the NAB BOWTS.

For operators not previously involved in this operation they shall, at a minimum, review the PPE requirements in **OTH-01**.

## 2. ACTION

All IWOW operator personnel

## 3. DEFINITIONS

BOWTS – Bilge Oily Wastewater Treatment System

LET – Load equalization tank

NAB – Naval Amphibious Base

OWS – Oil water separator

ROT – Recovered oil tank

## 4. BACKGROUND

Piers 3, 8, 13, and 21, at the NAB provide pier side connections for bilge/oily wastewater disposal for small boats moored to the NAB piers. Wastewater is transferred from pump stations located along the piers, through a double containment pipeline, to the BOWTS facility located adjacent to Pier 1. The treatment system compound is enclosed by chain link fencing and is identified as Building 333. Wastewater accumulation and alarms registering from either the pipeline leak detection system alarms or the spill/overflow instrumentation alarms are remotely monitored from the NBC IWOW treatment plant. Operations personnel perform daily, weekly, and monthly inspections of the BOWTS facility and piers in accordance with **Reference a**.

The NAB treatment system is comprised of an 8,000 gallon LET that receives wastewater via pipeline from the piers. When the level of wastewater in the tank reaches 5 feet, as monitored remotely from NBC, an operator is dispatched to NAB to perform system processing. The gravity clarified wastewater is pumped from the LET to a parallel plate OWS for mechanical separation. Metals precipitation through pH adjustment is accomplished by injecting sodium hydroxide into a mixing

chamber in the OWS. The effluent from the OWS is transferred to a 500-gallon surge tank for visual inspection and field testing to determine compliance with sewer discharge limits. If the effluent does not contain free-floating oils and meets discharge limits, valves are aligned to Sewer Connection No. 110. If not, effluent is recirculated back to the LET. The separate-phase oil and sludge are pumped from the OWS and LET to a 1,000 gallon ROT. When the ROT achieves capacity, the contents are manifested to the NBC IWOW treatment plant. Refer to **Enclosure 1** for a layout of the NAB BOWTS.

## 5. PROCEDURE

### 5.1 RECEIVING WASTEWATER FROM PIERS

Transfer of bilge and oily wastewater from boats to the BOWTS is conducted by the boat personnel at the pier after notification to NBC IWOW personnel in accordance with Oily Waste Transfer From Piers To BOWTS – NAB (**Enclosure 2**). The NBC Operator is to log the information provided on NAB Oily Waste Transfer Log (**Enclosure 3**). In the event the vessel has an oil capacity of 10,500 gallons (See 33 CFR 156.100), the specifications in **Reference b** are to be followed (e.g., DOIs, training, VPIC, FPIC). Thereafter, the boat personnel will access the pump panel at the head of the pier to energize the transfer pump on the pier. After connecting the wastewater transfer hose line, boat personnel will operate the transfer pump. The pump will be deactivated at the pier head pump panel upon completion of wastewater transfer. All of the pump stations on the piers have electric pumps. The wastewater is conveyed from the piers through double containment collection lines to a header along the quay wall, and eventually into the LET.

### 5.2 INITIATING SYSTEM OPERATION

**Reference c** includes a checklist to assist in operation of the system.

- 5.2.1 When the remotely monitored level of the LET reaches 5 feet, an IWOW operator shall respond to operate the treatment system, reducing the fluid level in the LET to 2.5 feet plus the oil blanket thickness. Below this level the fluid fraction becomes sludge, which is pumped out under a separate operation. Upon arriving at Building 333, the operator shall confirm the level in the tank at the level display on the main power panel in the northern corner of the compound. All measurements and readings shall be recorded in the operating logbook and on the respective inspection report in accordance with **Reference a**.
- 5.2.2 The directions indicated in this SOP are complimented by the instructions and enclosures in **Reference a**. Before operating the treatment system, any separate phase oil shall be skimmed from the LET and transferred to the ROT according to the following steps:
  - A. Determine the oil blanket thickness using a sounding stick and water sensing paste or interface probe (it makes a beeping sound).
  - B. Set up a diaphragm pump with 1-inch hose line on the catwalk platform atop the LET. Run the hose line to the ROT and secure hose outlet with rope in preparation for transfer. Connect air line from the diaphragm pump to the air supply connection near the recycle pump.
  - C. Measure length of hose to deploy into the oil blanket to ensure only oil is evacuated, with hose inlet optimally placed a few inches above the oil water interface.
  - D. Operate diaphragm pump and monitor reduction in oil blanket thickness until least practicable thickness achieved (approximately 8 to 12 inches).
- 5.2.3 After the oil blanket is reduced, ensure all valves are aligned for transfer to and from the OWS.
  - A. Open LET discharge valve, ensure sludge valve at bottom of LET is closed.

- A. Select one of two transfer pumps and open the upstream and downstream flow valves while securing the valves on the other pump.
  - B. Open the main valve to the OWS.
  - C. Ensure valve downstream of OWS is closed to the sewer line.
  - D. Open valve downstream of OWS to surge tank.
- 5.2.4 Check for debris to remove from upstream basket strainer before pump operation. Place strainer debris into 55-gallon consolidation drum staged on pallet in treatment compound.

### 5.3 Treatment System Operation

- 5.3.1 Supply energy to feed pumps at main control panel by accessing electric panel and switching pump power ON.
- 5.3.2 From the pump control panel on the OWS, operate the caustic chemical injection pump and mixer as necessary to achieve wastewater pH range of 8.5 to 9.5. The pH of the system is indicated on a readout located at the main control panel. Ensure accurate pH measurement by performing field calibration of the pH meter or double-checking using litmus paper.
- 5.3.3 Operate selected feed pump using the hand switch on the pump control panel to transfer wastewater from LET to OWS. Monitor flow on the pump control panel flow meter.
- 5.3.4 Operate the OWS pump from the pump control panel and verify wastewater is going to the surge tank. Add five pounds of calcium hypochlorite to the surge tank. Accumulate a sufficient volume of wastewater in the surge tank for sample collection.
- 5.3.5 Intermittently operate the sludge and oil pumps as necessary. Transfer oil based on visual inspection of the decanted oil chamber accessed from the top of the OWS.
- 5.3.6 Halt all pump operation to collect sample for field test verification in compliance with sewer discharge limits for Zinc, Copper, and pH. Field test materials are housed on site in the operations shed.

### 5.4 Wastewater Discharge

- 5.4.1 If effluent is within discharge limits:
- A. Open valves from surge tank to sewer discharge line. (assure that valve back to let is secured).
  - B. Activate surge tank discharge pump.
- NOTE: If conditions warrant, discharge to the sewer may bypass the surge tank by closing the surge tank inlet valve and opening the OWS to sewer valve. Normal operations are to discharge from the surge tank. This method of operation allows the operator to easily visually check the effluent discharge for the presence of oil by looking in the surge tank.
- C. Continue feed and OWS pump operation, reducing fluid level in LET to target level (approximately 2.5 feet plus the oil blanket thickness).
- 5.4.2 If effluent is **NOT** within discharge limits:
- A. Close valve downstream of recycle pump to sewer line.
  - B. Open valve downstream of recycle pump to recirculation line going back to LET.

- C. Operate recycle pump to transfer contents of surge tank to LET.
- D. Operate recycle pump until water level is below surge tank outlet level. Complete evacuation of water from surge tank using a 1-inch hose connected to a bypass line downstream of the surge tank outlet valve.

## 5.5 HALTING SYSTEM OPERATION

- 5.5.1 Secure valves to feed pumps and de-energize pumps at electric panel.
- 5.5.2 Secure valves from LET and OWS inlet and outlet.
- 5.5.3 After effluent is pumped as low as possible from surge tank, secure valves downstream of OWS to surge tank and sewer.
- 5.5.4 Note flow meter reading in logbook and waste flow log.

## 5.6 Recovered Oil and Sludge Disposition

Recovered oil and sludge from the LET and OWS are stored in the 1,000 gallon ROT. Daily inspection of the NAB BOWTS includes visual inspection of the opaque ROT to confirm the fluid level. When this tank reaches 90% capacity or the 90-day storage limit, the recovered oil and sludge shall be removed using a vacuum tanker truck positioned in the bermed loading/unloading dock, and manifested to the NBC IWOW facility.

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# STANDARD OPERATING PROCEDURE IWOW-070

**TITLE: Sludge Transfer Procedure from Tank 7 to Tank 34 and/or Tank 304**

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**References:** (a) PE Certification for Tank T-7  
(b) PE Certification for Tank T-34  
(c) PE Certification for Tank T-304  
(d) DTSC Part B Permit 97-SC-002 and Application

**Enclosures:** (1) Industrial Waste Sludge Transfer Checklist (CL-34)  
(2) PPE Requirements for Specific Operations/Tasks (OTH-01)

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## 1. PURPOSE

The purpose of this procedure is to transfer Industrial Waste (IW) Sludge generated in T-7 (Clarifier) to T-34 (Sludge Holding Tank) or T-304 (Sludge Day Tank), for the IW filter press operation. Sludge derived from chemical treatment of industrial waste is allowed to settle in the clarifier before it is transferred to the IW filter press. This increases the solids to water ratio in the sludge. By utilizing the sludge holding tank and allowing sludge from the clarifier to settle in the sludge holding tank, further increases the ratio of solids to water in the sludge prior to transfer to the sludge day tank. The more solids in the sludge prior to filter press operation increases the quality of the filter cake produced by the filter press. Refer to the PE Certifications for T-7 and T-34 for additional information and history on the tanks.

For Operators not previously involved in this operation they shall, at a minimum, review the PPE requirements in **OTH-01**.

## 2. SCOPE

This procedure covers all aspects of IW sludge transfer operations at Naval Base Coronado North Island Industrial Waste Treatment Plant (NBCNI IWTP).

## 3. ACTION

Plant Operators will implement this procedure.

## 4. PROCEDURE

### 1) Sludge Transfer from T-7 to T-34:

- a) Two Operators will be needed to perform this task.
- b) Refer to the IW Sludge Transfer Checklist (CL-34) for documenting transfer operations (See **Enclosure 1**).
- c) Verify that clarifier drive/rake in the clarifier is in operation. Clarifier drive/rake is to remain ON at all times.
- d) Verify the manual valve alignment on sludge pipelines including the T-34 inlet valve.
- e) Select one of the clarifier transfer pumps (P-7A or P7B) for operation and align valving for start-up to this pump. Turn ON air valve to activate the pump.

- f) At a frequency determined by the Lead Operator desludge the clarifier. The material being transferred is to be checked for the quality of sludge. To check the sludge, open the sample port on the outlet side of the pump.
  - i) Have a bucket or catch basin to contain the material from the sample port.
  - ii) If the solids remain high in the sludge continue transfer operations.
  - iii) If the sludge is watery, secure transfer operations.
  - iv) Transfer the sample material back to T-7.
- g) During transfer operations, monitor the T-34 tank level indicator to make sure the level does not exceed 12 feet (overflow prevention).
- h) At completion of the transfer operation, secure P-7A or P-7B pump and associated valves.
- i) DO NOT secure the T-34 inlet valve without the Lead Operator/ Q.C. authorization.

**2) Sludge Transfer from T-7 to T-304 (bypassing T-34):**

- a) Two operators will be needed to perform this task with radios for communication. One will stand-by at T-304 (to monitor the tank level), and the other will operate the T-7 (Clarifier) transfer pump.
- b) Refer to the IW Sludge Transfer Checklist (CL-34) for documenting transfer operations.
- c) Verify the clarifier drive in the clarifier is in operation. Clarifier drive/rake is to remain ON at all times.
- d) The T-34 tank inlet valve operates manually. To secure turn the rotate handle until it indicates closed.
- e) Verify and line-up the rest of the associated manual valves on the sludge pipelines (between T-7 and T-304).
- f) Select one of the clarifier transfer pumps (P-7A or P-7B) for operation and align valving for start-up of this pump.
- g) When set, the operator stationed at T-304 will radio to the operator at the clarifier pumps to activate the transfer pump.
- h) During transfer operations, the operator assigned to monitor T-304 will monitor the tank level and the product quality as it comes into T-304. When the tank level reaches one foot below the top of the tank, the operator will radio the operator stationed at the clarifier to SECURE the transfer pump, this will prevent overflow.

**NOTE:** If there is a high percentage of water in the sludge that is being transferred to T-304 from the clarifier secure the transfer operations before reaching the specified height.

- i) When the transfer is completed, secure all associated valves.
- j) DO NOT open the T-34 inlet valve without the Lead/Q.C. authorization. The inlet valve must remain in the SHUT position, while utilizing the T-304 tank.

**3) Sludge Transfer from T-34 to T-304:**

- a) One Operator will be needed to perform this operation.
- b) Refer to the IW Sludge Transfer Checklist (CL-34) for documenting transfer operations.

- c) Verify that T-34 mixer is operating.
- d) Verify and line-up associated manual valves on sludge pipeline (Between T-34 and T-304).
- e) Verify and line-up the T-34 outlet valve and valve after the sludge transfer pump.
- f) Verify the overhead manual valve on sludge pipeline (Next to T-34 "I" connection line), is SHUT.
- g) The T-34 inlet valve should be in the SHUT position.
- h) When done, start the sludge transfer electric pump by placing the selector switch (Labeled "P-37") in the HAND position. The transfer pump unit has a dial for variable speed adjustment. Adjust the speed to the appropriate level.
- i) When the pump is operating, the Operator will monitor the T-304 level and monitor the quality of the sludge discharging into the T-304 (thick sludge is good, thin (high water content) sludge is not desired). When the quality of the sludge diminishes, or the sludge level inside the tank reaches within a foot of the top of the tank, whichever occurs first, secure transfer operations.
- j) Secure the P-37 pump to cease transfer operations.

**NOTE:** Prior to securing the pump, ensure the electric pump's variable speed is cranked down to the lowest speed. Variable speed adjustment only works when the pump is in motion. TO PREVENT DAMAGE TO ALL VARIABLE SPEED PUMPS, ADJUST THE SPEED ONLY WHEN THE MOTOR IS ENGAGED.

- k) When the transfer of sludge is complete secure all associated valves.

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# Standard Operating Procedure IWOW-072

**TITLE: Operational Guideline and Procedures for NBSD Oily Waste Filter Press**

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**References:** (a) Preventative Maintenance Schedule  
(b) US Filter J-Press Owner's manual

**Enclosures:** (a) NBSD Processing Checklist (CL-3) [Steps 1. and 2.]  
(b) PPE Requirements for Specific Operations/Tasks (OTH—01)

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**1. PURPOSE:**

The purpose of this procedure is to outline the steps to operate the Sludge Filter Press at Naval Base San Diego BOWTS.

For operators not previously involved in this operation they shall, at a minimum, review and adhere to the PPE requirements in **OTH-01**.

**2. ACTION**

This procedure applies to all IWOW Operators.

**3. PROCEDURE**

**3.1 To ensure that excess oil does not get into the filter cake**

**After sludge has been pumped from a tank that is being cleaned for inspection, process the tank then drain the tank to the drainage basin. Do not try to pump more sludge to the sludge tank.**

**(A) Sludge Filter Press Pre-coating Procedures**

- 1) The bin under the OW filter press shall have the hard mounted pull tarp deployed over the entirety of the bin (closed and covered) at all times unless the operator is loading the bin. Per Title 22 all hazardous waste containers shall be closed during transfer and storage.
- 2) Pre-coating must be done prior to placing the sludge press on-line.
- 3) Close drain valve on T-401 premix tank, fill with water to  $\frac{3}{4}$  full.
- 4) Open outlet valve from T-401 premix tank to DE Pumps (P-401/P-402)
- 5) Open Inlet and discharge valve to DE Pumps (P-401/P-402)
- 6) Turn on premix tank mixer by placing switch in the chemical room to "hand" Panel M -401 press Mixing tank mixer"
- 7) Add Harborlite 700, 4 bags for one press.
- 8) Line up valves from premix tank through DE Pumps (P-401/P-402) to desired filter press.
- 9) Verify desired filter press hand control is in "closed" position and the press is closed.

- 10) Open pre-coating valve to the filter press being coated on catwalk.
- 11) On the filter press being coated, open inlet valve to the press, open both upper filter press drains and shut both filter press lower drains.
- 12) Verify cooling water valve to DE Pumps (P-401/P-402) is open and water is discharging back into T-401.
- 13) On Filter Press catwalk, verify sludge valve from air diaphragm sludge pumps (P-407/P-408) are shut.
- 14) Verify both premix pumps switches in the chemical room are in hand. When DE is mixed, turn on one premix pump from the switch on the filter press catwalk.
- 15) Verify no leaks and that pump is pumping through the filter press. Look for good fluid flow into T-401. Note: with this procedure water with Harborlite 700 infused in it enters and exits the filter press to be re-circulated. Continue re-circulating until the water entering T-401 is clear. This means the Filter Press is thoroughly coated with Harborlite 700.
- 16) While pre-coating, verify line-up of desired air diaphragm sludge pump (P-407/P-408) from desired sludge tank (T-402/T403) to the filter press.

#### **(B) SLUDGE FILTER PRESS START UP PROCEDURES**

- 1) Close air valve to desired sludge pumps (P-407/P-408) on the catwalk.
- 2) When water flowing into T-401 (precoat mix tank) is clear, verify suction and discharge valve to T-402/T403 are open, crack open air to desired air diaphragm sludge pump(P-407/P-408)at the pump.
- 3) Slowly open sludge valve from T-402/T403 located in the catwalk to the filter press.
- 4) Shut valves from precoat pumps to filter press.
- 5) Secure running precoat pump.
- 6) Open air valve to desired air diaphragm sludge pump (P-407/P-408) located in the catwalk.

#### **Verify desired sludge pump is running**

- 7) Open air valve to sludge pumps (P-407/P-408) on the catwalk.
- 8) Open Bottom drain valve on the Filter Press.
- 9) Verify water flowing into T-401 (precoat mix tank) from the filter press.

#### **(C) SLUDGE FILTER PRESS OPERATION PROCEDURES**

- 1) Operate one or both sludge pumps. If operating both sludge pumps, pump until pumps cycles once every 5 seconds, then secure one pump.
- 2) If operating one sludge pump, pump until water slows to a trickle and is clear flowing into T401. The filter press is full and now ready to be secured. If the trickle of

water isn't clear, there may be oil present which would indicate falsely that the press is full. Continue filling as long as possible. .

**(D) SLUDGE FILTER PRESS BLOW DOWN PROCEDURES**

**Once it has been determined that the filter press is full (note air pressure should be set to 40 psi only)**

- 1) Close influent and effluent valves at the pumps.
- 2) Close inlet valve to filter press and close main drainage basin valve.
- 3) Close both upper filter press drain valves and left lower drain valve.
- 4) Open right lower drain valve and open filter press main drain to T-401 (pre-coat mix tank).
- 5) Open air valve to the filter press and start blow down to ensure proper drying of sludge cake.
- 6) Monitor T-401 for water discharge for approximately 2-3 minutes but no more than 30, when there is no water discharge, secure blowdown and dump the Filter Press. Excessive air blow down time does not further dry filter cake and wastes energy.
- 7) The cake should be solid and resemble fresh asphalt. If it is runny contact a supervisor.

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# Standard Operating Procedure IWOW-075

**TITLE: Operational Guidelines to the Recovered Oil Skimming System at Naval Base Point Loma BOWTS Plant**

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**References:** (a) Preventative Maintenance Schedule

**Enclosures:** (a) PPE Requirements for Specific Operations/Tasks (**OTH-01**)

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## 1. PURPOSE

-The purpose of this procedure is to outline the steps to operate the Recovered Oil Skimming System at Naval Base Point Loma BOWTS Plant.

For operators not previously involved in this operation they shall, at a minimum, review and adhere to the PPE requirements in **OTH-01**.

-Purpose of the Recovered Oil Skimming System:

(A) Skim recovered oil and transport to RO Tank

(B) Offloading small containers from clean harbors. Note: **Not for contractor's tanker trucks such as Cal Marine, SBSB, BGI, Pac tank.**

(C) Transfers sludge from LET's to Scum Tank

## 2. ACTION

This procedure applies to all IWOW Operators

## 3. PROCEDURE

### (A) Skimming Recovered Oil

- 1) Secure yellow 1" suction valve to offload suction hose – FIGURE 1
- 2) Secure yellow 1 ½" discharge valve from the offload system to LET #2 – FIGURE 1
- 3) Open red 1 ½" suction valve from LET's – FIGURE 1
- 4) Open red 1 ½" discharge valve to Recovered Oil Tank – FIGURE 1
- 5) Select LET 1 or 2. Note: **Do not skim both tanks at the same time.**  
Open selected tank's 1 ½" valve – FIGURE 2
- 6)  
Open ROT 1 ½" discharge valve – FIGURE 3
- 7) Initiate pumping by opening the air valve to the pump. Note: **Only turn the valve about 1/8<sup>th</sup> of the way; pumping is gentle or it will suck in water** – FIGURE 1

**Shutdown:** When finished skimming, secure the air valve (FIGURE 1) and reverse valve opening steps;

- Secure ROT 1 ½" discharge valve (FIGURE 3)
- Secure selected LET's 1 ½" valve (FIGURE 2)
- Secure red 1 ½" discharge valve to ROT's (FIGURE 1)
- Secure red 1 ½" suction valve from LET's (FIGURE 1)

Bilge & Oily Waste Treatment System Facilities

**(B) Offloading Small Containers; ex: Clean Harbors**

- 1) Secure red 1 ½" suction valve from LET's – FIGURE 1
- 2) Secure red 1 ½" discharge valve to Recovered Oil Tank – FIGURE 1
- 3) Open yellow 1" suction valve to offload suction hose – FIGURE 1
- 4) Open yellow 1 ½" discharge valve from the offload system to LET #2 – FIGURE 1
- 5) Initiate pumping by opening the air valve to the pump. Note: **Do not operate at full air pressure.** – FIGURE 1

**Shutdown:** When finished offloading, secure the air valve (FIGURE 1) and reverse valve opening steps;

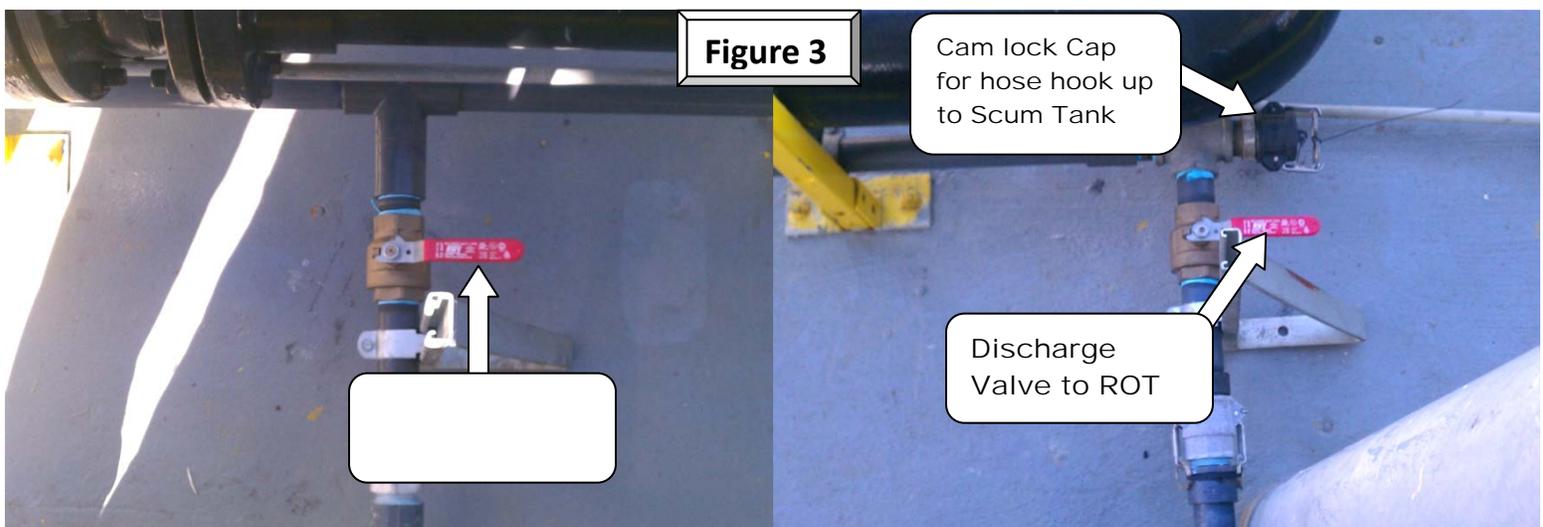
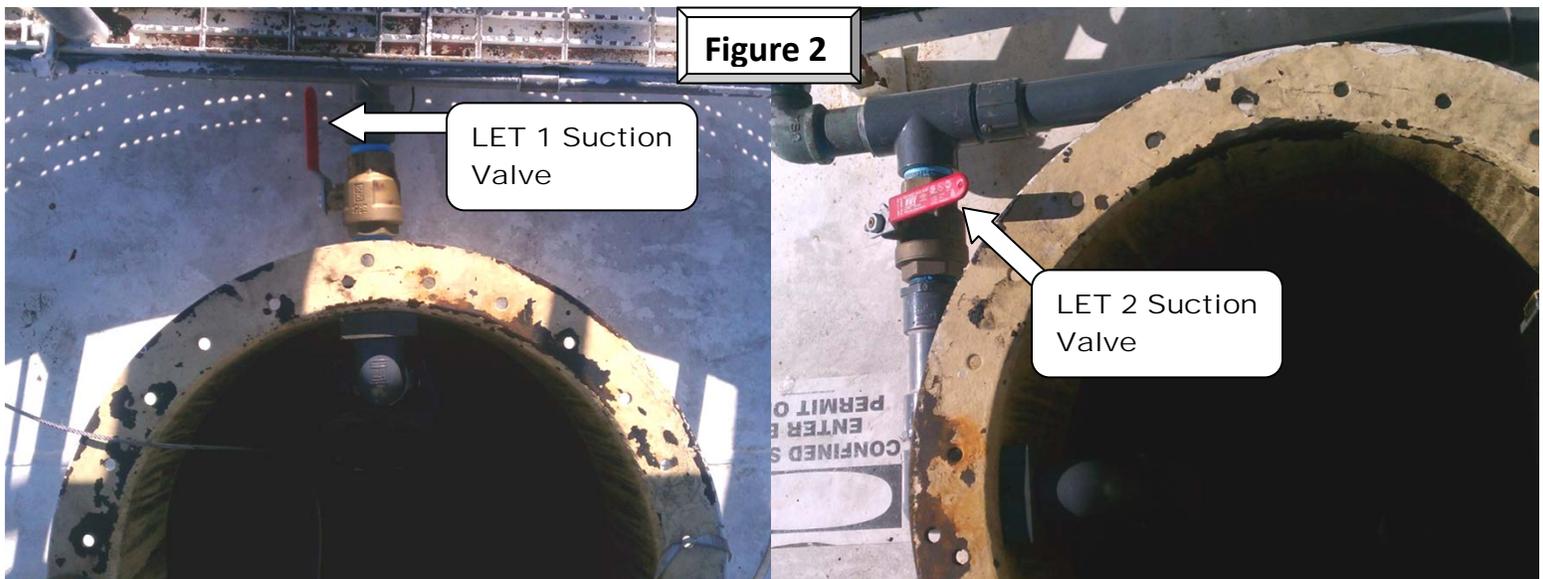
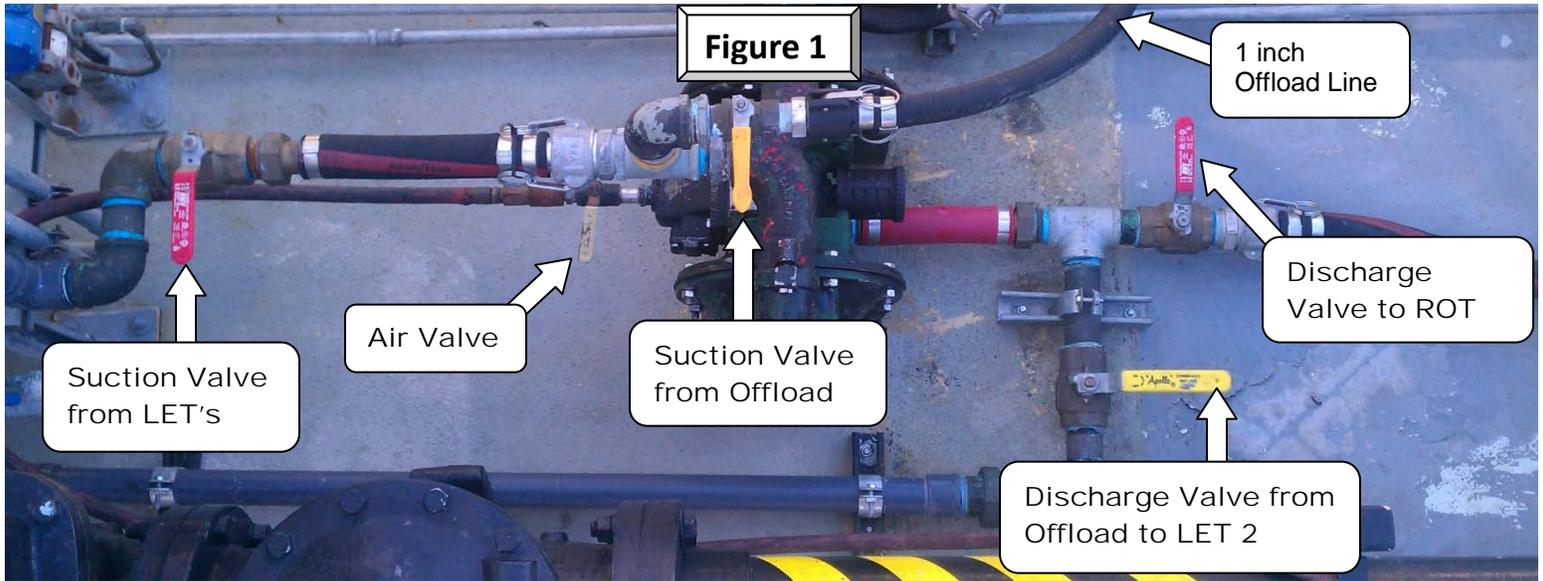
- Secure yellow 1 ½" discharge valve from the offload to LET #2 (FIGURE 1)
- Secure yellow 1" suction valve to offload suction hose (FIGURE 1)

**(C) Pumping Sludge Out of LET's; note: Remove skimming box from hose in LET first, use stainless steel cable to retrieve the skimming box.**

- 1) Secure yellow 1" suction valve to offload suction hose – FIGURE 1
- 2) Secure yellow 1 ½" discharge valve from the offload system to LET #2 – FIGURE 1
- 3) Open red 1 ½" suction valve from LET's – FIGURE 1
- 4) Open red 1 ½" discharge valve to Recovered Oil Tank – FIGURE 1
- 5) Select LET 1 or 2. Note: *Do not skim both tanks at the same time.*  
Open selected tank's 1 ½" valve – FIGURE 2
- 6) Secure 1 ½" discharge valve to the ROT. – FIGURE 3
- 7) Remove cam lock cap at end of pipe run by ROT and attach a 1 ½" hose. Attach 1 ½" hose to scum tank – FIGURE 3
- 8) Initiate pumping by opening the air valve to the pump. – FIGURE 1

**Shutdown:** When finished pumping, secure the air valve (FIGURE 1), detach 1 ½" hose from end of pipe and secure cam lock cap on pipe (FIGURE 3). Reverse valve opening steps;

- Secure selected LET's 1 ½" valve (FIGURE 2)
- Secure red 1 ½" discharge valve to ROT (FIGURE 1)
- Secure red 1 ½" suction valve from LET's (FIGURE 1)



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# Standard Operating Procedure IWOW-076

**TITLE: Guidelines for testing the Hi, Float, and Ultra Sonic level sensing equipment on sumps and tanks**

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**References:** (a) Manufacturers' Manuals/Instructions

**Enclosures:** (a) PPE Requirements for Specific Operations/Tasks (OTH-01)

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## 1. PURPOSE

The purpose of this procedure is to outline the steps for testing the specific level sensing equipment on sumps and tanks in accordance with the manufacturer's manual or instructions (Reference a), or by a testing procedure used by electricians and/or outside contractor. This is to be done on all level sensing equipment on an annual basis.

Purpose of level sensing equipment:

- (A) **Hi Hi** - Indicates when the liquid level is too high in a container; when the sensor is triggered an alarm goes off and the system shuts down in order to stop inflow of liquids
- (B) **Float** - Indicates when the liquid level is too high in a container; when the sensor is triggered a pump turns on in order to drain liquids (usually in sump)
- (C) **Ultra Sonic**- Uses ultra sonic waves to determine the certain level of liquids in tank; sets off alarm when the liquids in the tank reach a certain height (sits outside tank)

## 2. ACTION

This procedure applies to all electricians and outside contractors

## 3. PROCEDURE

The applicable testing procedure used by electricians and/or outside contractors, if different than described below, will be provided to the Plant Supervisor prior to testing.

### (A) Hi Hi

- 1) Use pole to lift the Hi Hi sensor until it is vertical; the system should shut down and alarm should go off. Check effectiveness at local screen if available. Replace sensor if the alarm did not go off.
- 2) .
- 3) Place Hi Hi sensor back in liquid; reset alarm and verify that all alarms have been cleared.

### (B) Float

- 1) Use pole to lift the Float sensor until it is vertical, if the corresponding pump does not turn on, replace the Float sensor.
- 2) Repeat Step 1. If satisfactory, continue to Step 2. If unsatisfactory, contact Supervisor/Manager for further instructions.
- 3) Place float back in liquid, reset alarm and verify that all alarms have cleared.

### (C) Ultra Sonic

- 1) Disengage all pumping in and out of corresponding tank.

- 2) Make note of the liquid height in the sensor's corresponding tank at the tank's local reading or SCADA-(a level/sensor reading system at the Operational Control Station).
- 3) Remove Ultra Sonic sensor from tank (may require wearing a harness).
- 4) Place the sensor over a flat surface to zero out; check the SCADA to confirm that the height reads zero feet. If the height read is not zero (ex: 3 ft) then replace Ultra Sonic sensor.
- 5) Once establishing that the SCADA reads zero, measure the height of liquid in the tank using the Sounder (or Keck machine) by dropping it into the tank.
- 6) Compare the Sounder height of the liquid to the height found in step 2); verify that the liquid heights match. If the heights do not match, replace the Ultra Sonic sensor.
- 7) Secure Ultra Sonic sensor back in flange connection on top of tank.
- 8) Once the sensor is secure, compare the height read from the SCADA to the height found from the Sounder. If the heights do not match, replace the Ultra Sonic sensor.

The electricians and/or outside contractor will provide the Plant Supervisor with a test report that identifies the specific equipment tested and test results (pass or fail).