OIL SPILL MANAGEMENT AND CONTINGENCY PLAN

### Bunnythorpe Substation

# TRANSPOWER CONTRACTOR MANAGED DOCUMENT

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## PURPOSE OF THE OIL SPILL MANAGEMENT AND CONTINGENCY PLAN

## To provide particular information to assist Transpower contractors, subcontractors and other Transpower approved employees in the operation of oil spill equipment and the management of oil spill emergency responses at this site.

1. **DOCUMENT STATUS**

The Oil Spill Management and Contingency Plan complements but does not take precedence over any Transpower standards, manufacturer's information or similar documents or any specific instruction from Transpower. The manual also complements contractor's work procedures and training information.

As a Transpower Contractor managed Document, the Oil Spill Management and Contingency Plan has to meet contract requirements for its preparation and management which include quality, content, current applicability and suitability to be passed on to a succeeding contractor.

A copy of the Oil Spill Management and Contingency Plan must be retained and readily available on site to assist in meeting Transpower's and the contractors’ statutory obligations and to protect Transpower's assets.

1. **REFERENCES**

**TP.GS 54.01** Oil spill management

**TP.SS 05.10** Environmental management of existing assets

OIL SPILL EMERGENCY NOTICE

Ensure all Personnel are safe

MAJOR SPILL

If insufficient resources on site contact others who could assist. CONTACT LIST IN OIL SPILL MANAGEMENT AND CONTINGENCY PLAN

Use Contractor Oil Spill Kits. If insufficient use Transpower Oil Spill Kits.

Stop or limit the oil flow from source

Stop or limit the flow into any storm water drain or waterway

Contact: NGOC

Ph: (04) 563 8161

or 5555 (via TPSN)

Mop up and spread absorbent material over affected area to absorb oil

WASTE DISPOSAL PROCEDURE.

Please refer to Oil Spill Management & Contingency Plan

Oil Spill Accident report in the Oil Spill Management & Contingency Plan MUST be filled out.

If contractor Oil Spill Kits are insufficient a Transpower Oil Spill Kit is located in a yellow “wheelie bin” in the Crane Room. Access to this kit can be obtained by acquiring an entry approval to the substation.

The Oil Spill Management and Contingency Plan (OSMCP) for TRANSPOWER equipment at this site is located at the Control Room desk.

Please remember that Oil spill Accident Reports must be filled out and sent to the Transpower Service Delivery Manager

OIL FIRE EMERGENCY

**SCHEDULE OF HIGH RISK OIL AREAS**

**OIL FIRE**

Ensure all Personnel are safe

Call Emergency Services

( 111 )

Call National Grid Operating Centre

Ph: 04 563 5087

Is the fire on in service or isolated equipment?

In Service

**If it is safe to do so**:

Isolate the equipment from the network

Are skills & resources available to contain & fight the fire?

Out of Service

No

Wait for Fire Service & direct them to the fire

Yes

Stop oil flow at the source

Limit oil flow to storm water &/or waterways & contact Regional Council

Ph: 0508 476 558

Use NON-WATER extinguishers

Clean up oil and all affected areas

Oil Spill Accident Report

Dispose of oil & any waste

Areas of High Risk are identified in ‘TP.SS 05.10 Environmental management of existing assets’ under ‘Appendix B - Site Oil Management Requirements’ as:

1. Underground aquifers
2. Stormwater drains
3. Neighbours properties
4. Waterways

**Type of High Risk:** Stormwater drain discharge into Regional Council system.

**Location:** 1. The discharge point of the Discharge Containment tanks (1) is via a stormwater pipe into an existing stormwater pipe feeding to Discharge Containment tanks (3).

2. The discharge point of the Discharge Containment tanks (2) is via a pipe to an open drain outside the fence on the North West boundary adjacent to the Training Area roading area.

3. The discharge point of the Discharge Containment tanks (3) is via a pipe to the Manawatu District drainage system in the back of Redmayne and Raymond Streets.

4. The discharge point of the Discharge Containment tanks (4) is via a pipe to the Manawatu District open culvert drainage system at the end of Redmayne Street adjacent to Ashhurst-Bunnythorpe Highway.

**Procedure:** Check to ensure that oil is not being discharged from any of the discharge points. If so, use ‘Matasorb’ absorbent pads and pillows to stop or limit the flow of oil from the discharge point. If a large amount of oil has entered the stream, use an oil boom in the stream to contain the contamination. Contact the approved waste disposal agency as soon as possible to pump out the full containment tanks.

Please Remember: Oil Spill Risk Typically Increases When People Are

Working on Equipment at the Site.

**PROTECTION AGAINST OIL DISCHARGE**

The greatest risk of contamination of the watercourses surrounding Bunnythorpe Substation comes from the many items of equipment in service at the substation which contain oil for electrical insulating purposes, detailed below in the ‘Inventory of Equipment Containing Oil’.

As all stormwater collected on the site passes through oil interception facilities, any spilt oil should be either removed in the oil plate separator unit or contained in oil containment tanks thereby preventing the risk of contamination of the local environment.

**1.0 PRIMARY SPILL CONTAINMENT**

In the event of a major oil spill the following basic steps are advised, although the location and nature of the spill may require a different sequence to that detailed:

1. Attempt to halt or reduce the leakage at the source if possible. The Transpower Oil Spill Kit contains ‘Plug N Dike’ compound which can be used as a temporary means of plugging leaking tanks or containers.
2. Prevent the spilt oil from entering the station stormwater system, by closing off the isolation valves within the bunded area if applicable (see Subsection 2.0 below), or by blocking the entrance to nearby drains.
3. If the oil spill occurs outside a bunded area, attempt to contain the spill by using the ‘Matasorb’ sock from the Transpower Oil Spill Kit or similar means to enclose the oil and prevent it escaping.
4. Once the spilt oil has been contained it can be soaked up using ‘Matasorb’ absorbent material and Castrol ‘Mop’ oil absorbent granules. If a large volume of oil has been spilt contact the local waste oil disposal company detailed in the Contact List (Waste Disposal agency) to arrange for the oil to be pumped directly into a road tanker for approved disposal.
5. When all the oil has been soaked up, the materials used to achieve this should be placed in plastic bags for safe disposal. If a large amount of oil has contaminated the soil, the effected material may need to be removed for disposal at an approved landfill.

2.0 major items of plant

The items of plant which contain the largest volumes of oil at Bunnythorpe are power transformers. All power transformers are surrounded by bund walls, which in the event of a major spillage will contain the spilt oil and feed it directly into the station’s oil containment system for ultimate collection in the appropriate downstream oil containment tanks and the oil plate separator.

The bunded areas surrounding the power transformers have no oil shut-off valves.

In addition to bunding, all of the power transformers have low oil level alarms which are initiated if the oil level in any of the units drops below a pre-determined point.

If a low level alarm is detected in the NGOC, maintenance staff shall be notified and sent to investigate the cause.

3.0 minor items of plant

The minor items of plant (instrument transformers and local service transformers) located in the switchyard at Bunnythorpe Substation contain electrical insulating oil, are detailed below in the ‘Inventory of Equipment Containing Oil’, along with the major plant items.

Because of the relatively small volumes of oil contained in these items, they are not surrounded by bund walls or provided with dedicated connections to the station’s stormwater system.

If oil spillage from any minor item of plant should occur every attempt shall be made to collect and mop up the spilt oil following the procedures detailed above in Section 1.

The coarse rock ground cover found in the switchyard should assist in containing the oil in the immediate area of any spill, and if any oil does run away, it may find its way to one of the general drainage sumps on site and into the station’s stormwater system.

4.0 DESCRIPTION OF oil CONTAINMENT system

Bunnythorpe Substation has two types of oil interceptions systems:

1 - Sepa unit for oil containment from power transformers

2 - Separation by specific gravity for all other stormwater drainage, from instrument transformers and local service transformers

1 - The Sepa unit oil containment system at Bunnythorpe works by allowing any oil spill from the power transformers to drain to the Oil Containment Tanks (1) including the pumping well beside the Sepa Plate Separator. The Sepa unit operates when the oil level is above the second float switch. This pumps the liquid from the tank through the plate separator and any oil is contained in the waste oil tank and the water is discharged.

2 - The other oil interceptor tanks at Bunnythorpe work by allowing any entrapped oil to separate out of the run-off water due to the different specific gravities of the two fluids. The run-off water enters the successive tanks at a high level and is drawn off from a low level, thereby allowing the lighter oil to rise to the surface while the heavier water flows through the system and away.

The oil containment tanks at Bunnythorpe are routinely inspected on a 12 monthly basis by maintenance staff, for oil build up and general operational condition.

The location and catchment areas of the oil containment tank is as follows:

1. Oil Containment Tanks (1) – (3 x 25,000 + 12,700 = 87,700 litres) is located adjacent 55kV structure for CB1582 along the South East boundary of the Substation site. This collects the drainage from the power transformers. This comprises of 3 x 25,000 litre catchment tanks and a 12,700 litre pumping well.
2. Discharge Interceptor Tanks (2) – (4 x 600 = 2,400 litres) is located behind the Control Room approximately midway along the North West boundary of the Substation site. This collects the drainage from around the Control Room, Crane Room, Grid Skills and Steel yard.
3. Discharge Interceptor Tanks (3) – (3 x 17,411 = 52,233 litres) is located across Redmayne Street adjacent to the Transpower Stores boundary fence. This collects the Stormwater from the centre part of the Substation from the Centre line of the railway track in front of the Control Block to 124m South East of this track.
4. Discharge Interceptor Tanks (4) – (3 x 17,411 = 52,233 litres) is located outside the structure fence at the South East end of the 55kV structure and adjacent to the 220kV structure. This collects all the stormwater from the southern part of the switchyard.

If oil is detected in any of the tanks, arrangements should be made for the contents to be pumped out into a road tanker and transported away for recycling or approved disposal. See details of the approved Waste Disposal agency below in ‘Contact List - When an Oil Spill Has Occurred’.

Drawings of oil containment tanks located at Bunnythorpe Substation are contained in Transpower Drawing Management System (RedEye) drawing folder section BPE/IF2.

Drawings of oil containment and stormwater drainage located at Bunnythorpe Substation are contained in Transpower Drawing Management System (RedEye) drawing folder section BPE/IB5.

INVENTORY OF EQUIPMENT CONTAINING OIL

Station: Bunnythorpe Last Updated: 2020-04-24

| Device Position/ Location | Number of units and Description | Volume of Oil¹ | Bunded Area | Comments |
| --- | --- | --- | --- | --- |
| T2 | Hyundai TL2953-A11 | 61,400 | Yes |  |
| ET2 | Tyree 30kVA | 230 | Yes |  |
| T3 | Hyundai TL2953-A11 | 61,400 | Yes |  |
| ET3 | Tyree 30kVA | 230 | Yes |  |
| T9 | Wilson 50/100MVA | 37,100 | Yes |  |
| ET9 | GEC Alstom | 1,650 | Yes |  |
| T10 | Wilson 50/100MVA | 37,100 | Yes |  |
| ET10 | GEC Alstom | 1,650 | Yes |  |
| T15 | Wilson 18MVA | 25,700 | Yes |  |
| T16 | OEL 15MVA | 11,667 | Yes |  |
| LS9 | ABB 250kVA | 689 |  |  |
| LS10 | ABB 250kVA | 689 |  |  |
| CT212 | 3 x Nissin FGCH-100 | 840 |  | 3 x 240 ℓ |
| CT202 | 3 x Nissin FGCH-100 | 840 |  | 3 x 240 ℓ |
| VT127 | 3 x Arteche UTD-123 | 207 |  | 3 x 62 kg |
| CT172 | 3 x Arteche CH-123 | 369 |  | 3 x 123 ℓ |
| CT142 | 3 x Arteche CH-123 | 369 |  | 3 x 123 ℓ |
| CT122 | 3 x Arteche CH-123 | 369 |  | 3 x 123 ℓ |
| VT137 | 3 x Arteche UTD-123 | 207 |  | 3 x 62 kg |
| CT82 | 3 x Arteche CH-123 | 369 |  | 3 x 123 ℓ |
| CT72 | 3 x Arteche CH-123 | 369 |  | 3 x 123 ℓ |
| CT62 | 3 x Nissin FGCH-100 | 840 |  | 3 x 240 ℓ |
| CT52 | 3 x Arteche CH-123 | 369 |  | 3 x 123 ℓ |
| CT48 | 3 x Arteche CH-123 | 369 |  | 3 x 123 ℓ |
| CB918 | Siemens 3AQ1 | 13 |  | 12 kg hydraulic oil |
| CT918 | 3 x Koncar AGU-245 | 768 |  | 3 x 230 kg |
| CB892 | Siemens 3AQ1 | 13 |  | 12 kg hydraulic oil |
| CT892 | 3 x Arteche CA245 | 468 |  | 3 x 140 kg |
| CVT892 | 3 x Koncar VCU-245 | 219 |  | 3 x 66 kg |
| CT872 | 3 x Arteche CA245 | 468 |  | 3 x 140 kg |
| CVT872 | 3 x Koncar VCU-245 | 219 |  | 3 x 66 kg |
| CB782 | Siemens 3AQ1 | 13 |  | 12 kg hydraulic oil |
| CT782 | 3 x Koncar AGU-245 | 768 |  | 3 x 230 kg |
| CVT782 | 3 x ABB CPB 245 | 384 |  | 3 x 115 kg |
| CT752 | 3 x Koncar AGU-245 | 768 |  | 3 x 230 kg |
| CVT17 (CB752 bay) | 3 x ABB CPDE 245 F-C | 318 |  | 3 x 95 kg |
| CB742 | Siemens 3AQ1 | 13 |  | 12 kg hydraulic oil |
| CT742 | 3 x Koncar AGU-245 | 768 |  | 3 x 230 kg |
| CVT742 | 3 x Haefely Trench 230 SX | 294 |  | 3 x 88.5 kg |
| CT722 | 2 x Koncar AGU-245 | 414 |  | 2 x 207 ℓ |
| VT36 (55kV) | 2 x Arteche UTC-72E | 66 |  | 2 x 30 kg |
| CT1592 (55kV) | 2 x Mitsubishi PC-6S | 360 |  | 2 x 180 ℓ |
| CB692 | Siemens 3AQ1 | 13 |  | 12 kg hydraulic oil |
| CT692 | 3 x Koncar AGU-245 | 768 |  | 3 x 230 kg |
| CT652 | 3 x Koncar AGU-245 | 768 |  | 3 x 230 kg |
| CVT652 | 3 x Haefely Trench 230 SX | 294 |  | 3 x 88.5 kg |
| CT632 | 3 x Koncar AGU-245 | 768 |  | 3 x 230 kg |
| CVT632 | 2 x ABB CPDE 245 F-C | 212 |  | 2 x 95 kg |
|  | 1 x ABB CPB 245 | 128 |  | 1 x 115 kg |
| CB612 | Siemens 3AQ1 | 13 |  | 12 kg hydraulic oil |
| CT612 | 3 x Koncar AGU-245 | 768 |  | 3 x 230 kg |
| CT648 | 3 x Asea IMBE 245 A5 | 999 |  | 3 x 300 kg |
| CT622 | 2 x Arteche CTI-245 E | 222 |  | 2 x 100kg |
| VT35 (55kV) | 2 x Arteche UTC-72E | 66 |  | 2 x 30 kg |
| CT1582 (55kV) | 2 x Mitsubishi PC-6S | 360 |  | 2 x 180 ℓ |
| CT608 | 3 x Arteche CTI-245 E | 333 |  | 3 x 100kg |
| CB582 | Siemens 3AQ1 | 13 |  | 12 kg hydraulic oil |
| CT582 | 3 x Koncar AGU-245 | 768 |  | 3 x 230 kg |
| CVT582 | 3 x Haefely Trench 230 SX | 294 |  | 3 x 88.5 kg |
| CB552 | Siemens 3AQ1 | 13 |  | 12 kg hydraulic oil |
| CT552 | 3 x Koncar AGU-245 | 768 |  | 3 x 230 kg |
| CB532 | Siemens 3AQ1 | 13 |  | 12 kg hydraulic oil |
| CT532 | 3 x Koncar AGU-245 | 768 |  | 3 x 230 kg |
| CB522 | Siemens 3AQ1 | 13 |  | 12 kg hydraulic oil |
| CT522 | 3 x Koncar AGU-245 | 768 |  | 3 x 230 kg |
| CVT522 | 3 x Koncar VCU-245 | 219 |  | 3 x 66 kg |
|  |  |  |  |  |
| Grid Skills - Yard |  |  |  |  |
| T1 | Ferranti | 43,642 |  | 3 x 3,200 Gallons |
| CB72 | Mitsubishi 100-GM-500 | 80 |  | 80ℓ in bushings |
| CB1382 | Nissin KOR | 596 |  | 131 Gallons |
| VT1382 | 3 x Unknown | 60? |  | Estimated volume |
| CT1382 | 3 x Nissin FGC-31M | 174 |  | 3 x 12.8 Gallons |
| CB1412 | AEI JB424 WMI | 201 |  | 400 lbs |
| TF 33/11kV | Metropolitan Vickers | 2,500 |  | 500 Gallons |
| LST | Power Construction 50kVA | 523 |  | 115 Gallons |
| VT72 | 2 x Unknown | 600? |  | 2 x 300 ℓ RØ & BØ |
|  |  |  |  |  |
| Training Room 3 |  |  |  |  |
| CVT 110kV | 1 x Asea CPCA123/550N | 50? |  | No Data |
| CVT 220kV | 1 x Haefely Trench 230 SX | 98 |  | 1 x 88.5 kg |
| VT | 1 x Arteche UTD-72 | 30 |  | 1 x 27 kg |
| VT | 1 x Asea ? | 30? |  | No Data |
| VT | 1 x Arteche UTD-123 | 78 |  | 1 x 70 kg |
| VT | 1 x ABB EMFC-36 | 8 |  | 1 x 7 kg |
| LST | Power Construction | 458 |  | 1010 lbs |
|  |  |  |  |  |

¹Note: Quantities shown are totals (litres). Specific Gravity of 0.9 assumed for calculations from weights

CONTACT LIST – WHEN AN OIL SPILL HAS OCCURRED

|  |  |  |
| --- | --- | --- |
| EMERGENCY SERVICES | Ambulance, Fire, Police | Dial: Prefix for outside line then 111 |
| CONTRACTORS PERSONNEL | Name: Hendrik Smit  Maintenance Supervisor  Name: Hagan Burgess  Delivery Manager | Mobile: (027) 439 0313  Mobile: (027) 4262 572 |
| TRANSPOWER PERSONNEL | NGOC    **Name: Darryn Welham**  Service Delivery Manager | Phone: (04) 563 5087  TPSN: 5555  Phone: (06) 590 7691  Mobile: (021) 243 0014 |
| OTHER (e.g. another Contractor or Generator in the vicinity that could be called in to help) | Name: Lignesh Arunasalum  Ventia Operations  Manager Central | Teams: (06) 358 4965  Mobile: (027) 278 4135 |
| WASTE DISPOSAL AGENCY | J.B.s Environmental Limited | Phone: (06) 367 5075  Freephone: 0800 44 26 28 |

If you are unable to contact the NGOC or Transpower Service Delivery Manager and the oil spill has entered waterways contact the Regional Council immediately.

|  |  |  |
| --- | --- | --- |
| REGIONAL COUNCIL  Horizons (Manawatu-Wanganui) | Pollution Hotline 24hrs  0508 476 558 | Phone: (06) 9522 800  Fax: (04) 385 6960 |

Any contact with the Media will be made by Transpower.

WASTE DISPOSAL PROCEDURE

Pack all contaminated material into bags/drums.

**To dispose of contaminated oil.**

## Contact: J.B.s Environmental Limited

**Ph: 06 367 5075**

## Ph: 0800 44 26 28

To dispose of oil contaminated waste.

## Contact: J.B.s Environmental Limited

**Ph: 06 367 5075**

**Ph: 0800 44 26 28**

Check kit and replace any material required.

NZ Safety Blackwoods

Ph: 0800 660 660

Record Number …………

OIL SPILL ACCIDENT REPORT

(for spills greater than 5 litres)

Contractor:……………………………….. Site:…………………………………………………..

Date of Spill:……………………………… Time of Spill:………………………………………..

Persons on Site at Time of Spill:……………………………………………………………………….

……………………………………………………………………………………………………………

Describe the Incident – include reason WHY there was an oil spill:

Was there a fire? Yes/No

Did Oil escape into waterways? Yes/No

If yes, what was the name of the waterway? ………………………………………………………….

If Oil escaped into waterways, what were the waterway levels? Low/Typical of that waterway/High

What were the weather conditions? ………………………………………………………………….

…………………………………………………………………………………………………………..

Estimated Amount of Oil Spilled: …………... Estimated Amount of Oil Recovered: ……………

Describe Clean Up and Corrective Action:

Notification Schedule:

|  |  |  |
| --- | --- | --- |
| Organisation | Name of Person Notified | Time Notified |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Completed By:

Print Name: Position:

Signed: Date:

Please forward this form to the Transpower Service Delivery Manager.