

Land Use Consent Report

RML12028

To John McKenzie, Group Manager Environmental Services
 From Helen Johnson, Consultant Planner
 Date 30 April 2012
 Subject **An application under the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011:**
Removal of flare/blowdown pit earthen bunds and potential removal of contaminated soil at Kapuni Well Site KA2.

Application Number: RML12028
Applicant: Shell Todd Oil Services Limited
Location of Activity: 140 Palmer Road, Kapuni (Kapuni Well Site KA2)
Legal Description: Lot 1 DP 10168
Zone: Rural (Map No. 8)
Notations: None
Type of Activity: Discretionary under the NES
Site Visit: 18 April 2012

NATIONAL ENVIRONMENTAL STANDARDS

The Resource Management (National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 ("NES") came into force on 1 January 2012. 9 October 2008. The NES regulations deal with territorial authority functions under section 31 of the Resource Management Act 1991:

- 31(1) Every territorial authority shall have the following functions for the purpose of giving effect to this Act in its district:*
- (b) the control of any actual or potential effects of the use, development, or protection of land, including for the purpose of—*
 - (iia) the prevention or mitigation of any adverse effects of the development, subdivision, or use of contaminated land.*

The objective of the NES is to ensure land affected by contaminants in soil is appropriately identified and **assessed** when soil disturbance and/or land development activities take place and, if necessary, that the land is remediated or the contaminants contained to make the land safe for human use.

The NES applies only to specified activities on specific land, as follows:

1. The activity is one of the following:
 - (a) removing or replacing a fuels storage system in or on the piece of land;
 - (b) sampling the soil of a piece of land to determine whether or not it is contaminated and if so the amount and type of contamination;
 - (c) disturbing the soil of the piece of land;
 - (d) subdividing the land
 - (e) changing the use of the piece of land to a use that, because of the type of land, is reasonably likely to harm human health.

2. The land is, has been, or more likely than not is or has been, used for an activity or industry described in the current edition of the Hazardous Activities and Industries List (HAIL). This may be determined by using the most up-to-date information about the land held by territorial authority or by relying on the report of a preliminary investigation undertaken by a suitably qualified and experienced practitioner reported on in accordance with the "Contaminated Land Management Guidelines No. 1 – Reporting on Contaminated Sites in New Zealand" (Ministry for the Environment).

DESCRIPTION OF THE PROPOSED WORKS

URS New Zealand Limited (URS) have prepared an application for resource consent under the NES on behalf of Shell Todd Oil Services Ltd (STOS). It is proposed to remove the flare/blowdown pit from the Kapuni Well site KA2 located at 140 Palmer Road, Kapuni.



Figure 1: Location of site

This is a 1.3673ha site located east of and adjoining Palmer Road. The site is an operating production well site (gas) owned and operated by STOS (refer Figure 2). The flare/blowdown pit is located near the northern boundary of the site and is estimated to extend approximately 1.5m to 2.5m below the surrounding grade.

Flare/blowdown pits were historically used to contain potentially contaminated vapour, water and condensate associated with gas well development, maintenance and operation. Standing water arising from these activities was generally removed for off-site disposal. The pit has not been used since approximately 2006 as, with the connection of the well site to the production station, it is no longer required.



Figure 2: Aerial photograph showing site KA2

STOS has undertaken to decommission the pit and the associated containment bunds at this site. This would involve excavation of the bunds and of soil from under and around the pit area. Soil that is found to be contaminated would be removed from the site to an approved off-site disposal facility; the remaining (uncontaminated) soil would be used for reinstatement of the site.

DISTRICT PLAN REQUIREMENTS

District Plan rules regulating land use continue to have effect so far as they apply to controlling effects other than assessing and managing contaminants in soil to protect human health (i.e.: those effects that are outside the scope of the NES).

The site is located in the Rural Zone. Although petroleum production stations and well heads are a Discretionary Activity under the District Plan (3.01.4(d)), the use is legally established. All activities in the rural zone are required to be undertaken in a manner ensuring no offensive or objectionable nuisance effects on adjacent properties (3.02.2(1)). Sounds specifically generated by construction, maintenance and demolition activities which are assessed, managed and controlled by reference to NZS6803P:1984 *The Measurement and Assessment of Noise from Construction, Maintenance and Demolition Work* are exempt from the noise standards in the District Plan (10.01.4(d)). Therefore, there are no additional consent requirements from the District Plan.

EVALUATION

Status of the application

Does the NES apply?

The proposed activity involves disturbing the soil of a piece of land and therefore the first 'test' in the NES is met.

The HAIL list (October 2011) includes the following activity under "E: Mineral extraction, refining and reprocessing, storage and use"

6. Hydrocarbon exploration or production, including well sites or flare pits.

The Taranaki Regional Council has developed a 'Register of Selected Land Uses' (RSLU) database to record information about all potentially contaminated sites that have been investigated (regardless of whether contamination was found to be present) in the region. There are no sites in the Taranaki region that are classified as contaminated - all sites either have no contamination, have been remediated, or are being actively managed to ensure they do not pose an unacceptable public or environmental risk

Site KA 2 is identified in the RSLU as Land Use Number 9127-0, categorised as having been used historically and currently being used for "hydrocarbon exploration". Therefore the second 'test' in the NES is met and the requirements of the NES apply to the proposed decommissioning of the flare/blowdown pit.

What is the status of the activity?

The NES provides for an activity to be considered as a Permitted, Controlled, Restricted Discretionary or fully Discretionary Activity depending of the extent of the activity and whether specified standards or requirements can be met.

With regard to disturbing soil, the following requirements apply:

8 Permitted Activities

- (3) *Disturbing the soil of the piece of land is a permitted activity while the following requirements are met:*
- (a) *controls to minimise the exposure of humans to mobilised contaminants must—*
 - (i) *be in place when the activity begins:*
 - (ii) *be effective while the activity is done:*
 - (iii) *be effective until the soil is reinstated to an erosion-resistant state:*
 - (b) *the soil must be reinstated to an erosion-resistant state within 1 month after the serving of the purpose for which the activity was done:*
 - (c) *the volume of the disturbance of the soil of the piece of land must be no more than 25 m³ per 500 m²:*
 - (d) *soil must not be taken away in the course of the activity, except that,—*
 - (i) *for the purpose of laboratory analysis, any amount of soil may be taken away as samples:*
 - (ii) *for all other purposes combined, a maximum of 5 m³ per 500 m² of soil may be taken away per year:*

- (e) *soil taken away in the course of the activity must be disposed of at a facility authorised to receive soil of that kind:*
- (f) *the duration of the activity must be no longer than 2 months:*
- (g) *the integrity of a structure designed to contain contaminated soil or other contaminated materials must not be compromised.*

9 Controlled Activities

- (1) *If a requirement described in any of regulation 8(1) to (3) is not met, the activity is a controlled activity while the following requirements are met:*
 - (a) *a detailed site investigation of the piece of land must exist:*
 - (b) *the report on the detailed site investigation must state that the soil contamination does not exceed the applicable standard in regulation 7:*
 - (c) *the consent authority must have the report:*
 - (d) *conditions arising from the application of subclause (2), if there are any, must be complied with.*
- (2) *The matters over which control is reserved are as follows:*
 - (a) *the adequacy of the detailed site investigation, including—*
 - (i) *site sampling:*
 - (ii) *laboratory analysis:*
 - (iii) *risk assessment:*
 - (b) *how the activity must be—*
 - (i) *managed, which may include the requirement of a site management plan:*
 - (ii) *monitored:*
 - (iii) *reported on:*
 - (c) *the transport, disposal, and tracking of soil and other materials taken away in the course of the activity:*
 - (d) *the timing and nature of the review of the conditions in the resource consent:*
 - (e) *the duration of the resource consent.*

10 Restricted Discretionary Activities

- (1) *This regulation applies to an activity described in any of regulation 5(2) to (6) on a piece of land described in regulation 5(7) or (8) that is not a permitted activity or a controlled activity.*
- (2) *The activity is a restricted discretionary activity while the following requirements are met:*
 - (a) *a detailed site investigation of the piece of land must exist:*
 - (b) *the report on the detailed site investigation must state that the soil contamination exceeds the applicable standard in regulation 7:*
 - (c) *the consent authority must have the report:*
 - (d) *conditions arising from the application of subclause (3), if there are any, must be complied with.*
- (3) *The matters over which discretion is restricted are as follows:*
 - (a) *the adequacy of the detailed site investigation, including—*
 - (i) *site sampling:*
 - (ii) *laboratory analysis:*
 - (iii) *risk assessment:*
 - (b) *the suitability of the piece of land for the proposed activity, given the amount and kind of soil contamination:*

- (c) *the approach to the remediation or ongoing management of the piece of land, including—*
 - (i) *the remediation or management methods to address the risk posed by the contaminants to human health:*
 - (ii) *the timing of the remediation:*
 - (iii) *the standard of the remediation on completion:*
 - (iv) *the mitigation methods to address the risk posed by the contaminants to human health:*
 - (v) *the mitigation measures for the piece of land, including the frequency and location of monitoring of specified contaminants:*
- (d) *the adequacy of the site management plan or the site validation report or both, as applicable:*
- (e) *the transport, disposal, and tracking of soil and other materials taken away in the course of the activity:*
- (f) *the requirement for and conditions of a financial bond:*
- (g) *the timing and nature of the review of the conditions in the resource consent:*
- (h) *the duration of the resource consent.*

11 Discretionary Activities

- (1) *This regulation applies to an activity described in any of regulation 5(2) to (6) on a piece of land described in regulation 5(7) or (8) that is not a permitted activity, controlled activity, or restricted discretionary activity.*
- (2) *The activity is a discretionary activity.*

The application states that the extent of excavation required is not known but is estimated to be in the order of 100-500m³ over an area of approximately 60-100m². This would exceed the quantity allowed for the activity to be considered as permitted (volume of disturbance permitted for a site of 100m² = 5m³).

In order for an activity to be considered as a Controlled or Restricted Discretionary Activity, a detailed site investigation of the piece of land must exist and the report must state that the soil contamination does not exceed or exceeds (respectively) the applicable standard in regulation 7 of the NES. In this instance, the applicant considers that it would be more efficient and effective to undertake an analysis of the site, including the type and level of contamination, while the works are being undertaken rather than undertaking a detailed site investigation prior to the decommissioning works being undertaken. In addition, there are potential health and safety issues associated with sampling soil within the confined pit area. Therefore the proposed works are considered as a Discretionary Activity.

Evaluation of the application

As the proposed works are a Discretionary Activity, the Council has unlimited discretion regarding the controls applied. However, it is considered useful to consider those matters contained in the standards in the NES for a permitted, controlled or restricted discretionary activity as a guide to the matters of concern. The Council must also consider Part II of the Resource Management Act 1991.

Effects of the proposed works

In essence the proposed works would involve decommissioning of the existing flare/blow down pit bunds and the removal of soil assessed to be not suitable to remain on site. The application states that it is anticipated that the majority of soils would be suitable for reinstatement on site.

The proposed works are as follows:

- Storm water drains in the immediate vicinity of the proposed works would be isolated/protected.
- Standing water present in the pit would be pumped out of the pit and transported off-site for disposal/treatment at a facility licensed to accept such waste.
- The bunds around the pit would be excavated, with the soil temporarily stockpiled on site.
- Soil visually assessed as contaminated would be stockpiled separately; this would allow characterisation of the soil to determine whether it would be suitable for reuse on site or would need to be removed to an appropriately licensed off-site facility.
- The soils adjacent to the pit would be test pitted to determine the area to be excavated.
- Overburden soil would be excavated to the appropriate stock piles. The maximum anticipated depth of excavation would be 1m below the groundwater table.
- The excavation below the water table would be backfilled with imported clean rock and/or gravel material or suitable soil from the stockpiles.
- The excavation would be backfilled with suitable soil from the stockpiles or imported hard fill and compacted. Any additional soil would be blended to grade on site.

The proposed excavations are represented diagrammatically in Figure 3.

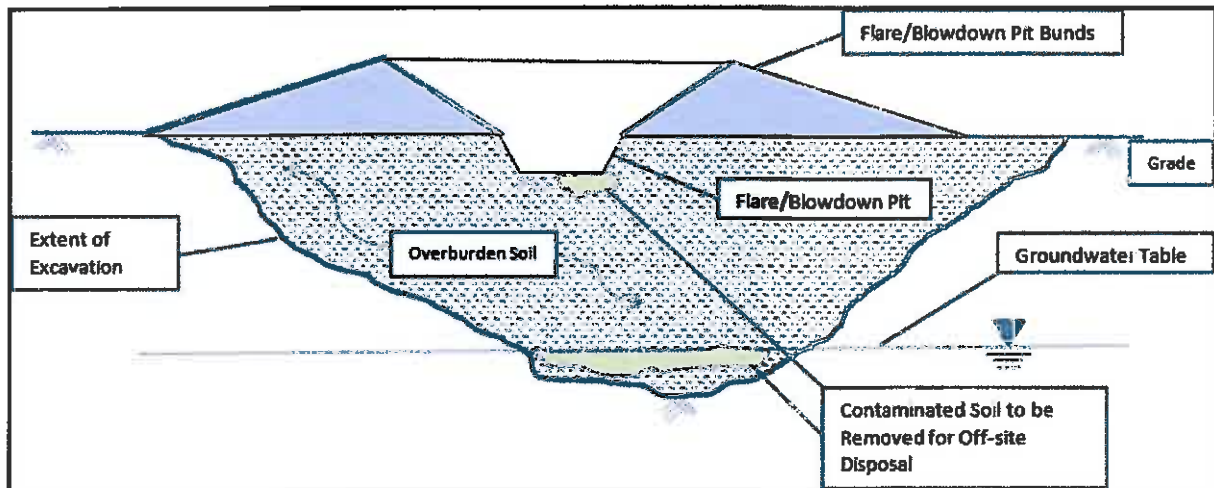


Figure 3: diagrammatic representation of proposed excavation works

The extent of the excavation required would be determined during the works based on observation of the condition of the soil (discolouration, odour, free-phase product etc) and confirmed later through laboratory analyses of the soil samples.

The application states that soils would be collected and analysed in accordance with "Contaminated Land Management Guidelines No. 5: Site Investigation and Analysis of Soils" (2011) and characterised for off-site disposal or on-site filling based on Ministry for the Environment "Guidelines for Assessing and Managing Petroleum Hydrocarbon Contaminated Sites in New Zealand (Revised 2011) and the hierarchy set out in the Ministry for the Environment "Contaminated Land Management Guidelines No. 2 (2011), as per clause 7 of the NES. Soils that do not meet the above criteria would be disposed of off-site at a facility licensed to receive such waste. Soils identified for off-site disposal would be characterised as required by the receiving facility.

Works are likely to take 2-6 weeks to complete and would commence following granting of the consent. However, physical works would likely only occur during the first and last week of that period (with the interim period used to conduct soil quality laboratory analyses).

Subsequent to making the application, URS advised that the works may be undertaken in stages, with the bund being excavated first and the overburden soil under the pit being excavated later.

Effects on the Environment

Effects on the environment are likely to relate to traffic, noise, surface water quality, odour and dust, and the effects of transporting contaminated soil off site.

The following methods would be adopted to minimise effects on the environment:

- Storm water drains would be isolated/protected in the immediate vicinity of the works.
- The area surrounding the excavations would be graded to direct ground surface water away from the excavations.
- Wet soil excavated from below the groundwater table would be allowed to drain back to the excavation from the excavator bucket prior to placement in the stockpile.
- Any water in the excavation would be visually monitored; where sheen or other indications of free-phase hydrocarbons were observed, the water would be pumped out and transported off site for disposal/treatment at a licensed facility.
- Stockpiles would be established at locations not subject to storm water run-on and remote from drains, soakage areas etc. An earth (300mm) or hay bale bund would be constructed around the periphery and stockpiles would be less than 4m in height with a stable slope. Stockpiles which are inferred to be contaminated would be lined. The stockpiles would be covered or wetted to minimise odour and dust effects.
- Soil samples would be collected from the stockpiles, excavations and test pits to characterise the extent, if any, of contaminated soil.
- Of the soil that is excavated only non-contaminated soil would be reused on site.
- Dust and odours would be controlled by limiting works during high winds and/or wetting soils as required minimising off-site effects.
- Off-site transport of waste soil and waste liquids would be in accordance with the Land Transport Rule: Dangerous Goods 2005. All of site loads would be covered and free liquids removed for separate transportation. Water tight truck beds would be used as required. Wheels would be inspected prior to leaving the site and cleaned if required to minimise off-site tracking of soil. The contractor would implement appropriate traffic management during the works in line with industry practice.

Noise would be generated by mechanical plant used on site for excavation, backfilling, stock piling and on-site traffic. However, as noted earlier, physical on-site works would be likely to occur only during the first and last week of the estimated up to 6 weeks of activity. The site has been an industrial site for some time and is part of a wider network associated with Kapuni Gas field. Residences are located at some distance from the site and would be accustomed to industrial-type works associated with the facility. The proposed works constitute construction works and as such are subject to NZS6803P:1984 (construction noise) under the District Plan.

Health and Safety Effects

It is noted in the application that during the proposed works, site workers may be exposed to contaminated soils. The works would be undertaken and supervised by qualified personnel in accordance with STOS comprehensive health and safety requirements, with a site specific health and safety plan being developed and implemented for the works. All works would be

conducted in accordance with the applicable Department of Labour/Occupational Health and Safety rules.

Part II of the Resource Management Act 1991

The activity must be considered in terms of the purpose and principles of the Resource Management Act 1991.

Section 5 of the Act sets out the purpose of the Act – to promote the sustainable management of natural and physical resources. Sustainable management is defined as:

managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while—

- (a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
- (b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
- (c) avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

The site contributes to the economic well being of the community. The measures proposed in the application seek to ensure that the health and safety of site workers is protected during the decommissioning of the pit and during any transportation of contaminated soils off-site to a licensed facility. In the longer term, the decommissioning of the pit would contribute to the overall health and safety of the community and the wider environment by removing any contaminated soil and remediating the site.

Section 7 requires consent authorities to have particular regard to the effect of an activity on the maintenance and enhancement of the quality of the environment (7(f)). It is considered that the proposed decommissioning of the pit would result in an enhancement of the quality of the environment by the removal of potentially contaminated soils from the site.

There are no matters of national importance (section 6) or known Treaty of Waitangi issues (section 8) that are affected by this application.

CONCLUSION

The proposed decommissioning of the flare/blowdown pit at the Kapuni KA2 wellsite would remove an existing facility which has the potential to impact on human health and the environment by way of contamination of soils. The application includes methodologies to minimise possible effects from the disturbance of soil that is potentially contaminated.

The proposed works would not be significantly different from the majority of maintenance works completed by STOS at the Kapuni well sites, and is in keeping with the industrial nature of the site. Methods are proposed to ensure that impacts beyond the site boundaries are minimised.

Unlined flare/blow down pits are no longer considered acceptable for such a facility and as such, by decommissioning the pit the applicant is bringing this part of the facility into line with current requirements.

Although the application states that the estimated period of works is 2-6 weeks, it is considered appropriate to recommend a longer period of time for completion of the works to enable flexibility in the work programme to respond to unforeseen events.

RECOMMENDATION

THAT consent be granted to Shell Todd Oil Services Limited to undertake works associated with the decommissioning of the flare/blowdown pit at Kapuni Well Site KA2 located at 140 Palmer Road, Kapuni (being Lot 1 DP 10168), including excavation, stockpiling of earth and removal of contaminated soil to a licensed treatment/disposal facility, pursuant to Sections 104, 104B and 108 of the Resource Management Act 1991.

For the following reasons

1. The activity will not give rise to any adverse effects on the surrounding environment that are more than minor.
2. Removal of contaminated soil (if any) from the site will result in an improved environmental outcome.
3. Conditions are recommended that will ensure that any adverse effects on human health and the environment are minimised.

Subject to the following conditions

1. That the works are undertaken substantially in accordance with the information supplied in support of resource consent application RML12028.
2. That a plan detailing site management, soil transportation, and health and safety procedures for the proposed works shall be provided to the South Taranaki District Council prior to works being undertaken. All works shall be undertaken substantially in accordance with the plan and shall be completed within three months of the commencement of the works on site. Should the works be staged in a manner such that the overall duration is greater than three months then the site shall be reinstated in accordance with the requirements of Condition 5 during periods of inactivity anticipated to exceed one month.
3. That the consent holder shall notify the South Taranaki District Council of the intended start date no less than one week prior to works commencing.
4. That any soil that is determined to be contaminated per the Resource Management (National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 shall be disposed of to a facility authorised to receive such soil. The consent holder shall notify the South Taranaki District Council of the facility to be used prior to disposing of soil to this site.
5. That all areas of exposed soil shall be re-grassed or reinstated to an erosion resistant state within one month of completion of the earthworks.
6. That the consent holder shall submit a report from a suitably qualified practitioner to the South Taranaki District Council no later than three months following completion of the works, documenting the decommissioning of the flare/blown down pit including, the quantity of soils excavated, the results of the soil testing (both of soil remaining on-site and the soil removed), and the remediation of the site.

RML12028 – Shell Todd Oil Services Limited
Decommissioning of the flare/blow down pit at the Kapuni KA2 well site

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