<u>**CAPTION SHEET AND SUMMARY OF FACTS**</u>

Bay of Plenty Regional Council	**-v-**	**NAME:**	**Mobil Oil New Zealand Limited**
		ADDRESS:	**Russell McVeagh** **Vero Centre** **Shortland Street** **Auckland**

Charge:

CRN	Date	Charge	Provision	Maximum penalty
15070501928	27 April 2015	Discharging a contaminant into water	Sections 338(1)(a) and 15(1)(a) RMA	$600,000

SUMMARY

Introduction

1. This prosecution relates to the discharge of heavy fuel oil (**HFO**) by the defendant, Mobil Oil New Zealand Limited (**Mobil**), into Tauranga Harbour on 27 April 2015. The HFO discharged from the "lateral" pipe at the 1,340 metre point in the Mobil pipeline (**lateral 1340**).[1]

Background

2. Mobil is New Zealand's oldest oil company, and is a leading supplier of fuel and lubricants in New Zealand. It is a subsidiary of Exxon Mobil Corporation, which is an American multinational oil and gas corporation headquartered in Irving, Texas. Exxon Mobil is the world's fifth largest company by revenue, and the third largest publicly traded company by market capitalisation. Exxon Mobil had earnings of US$16.2 billion in 2015[2] and Mobil had a net income of NZ$60 million for the period ending 31 December 2014.

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[1] A description of "laterals" is set out in [12] to [17] below.

[2] Exxon Mobil 2015 Financial and Operating review http://cdn.exxonmobil.com/~/media/global/files/financial-review/2015_exxonmobil_financial_and_operating_review.pdf at page 2.

3. Mobil supplies fuel to commercial, industrial, marine, aviation and retail customers in New Zealand via a number of bulk storage terminals and pipelines, airport facilities and retail service stations. Mobil currently supplies around 25 - 27% of the total fuels market in New Zealand.

4. Mobil has 81 employees based in New Zealand and engages more than 100 contract personnel.

The Mt Maunganui terminal site[3]

5. One of Mobil's storage terminals / coastal bulk plants is at Mt Maunganui. This terminal handles over 300 million litres of fuel annually. It supplies marine fuels, petrol and diesel fuel throughout the surrounding regions.

6. The fuel storage capacities at Mobil's site include up to 16.5 million litres of gasolines (91RON and 98RON), up to 10.3 million litres of diesel and up to 22.3 million litres of 180 centistoke marine fuel oil (HFO). Mobil has operated at this site for over 50 years.

7. Mobil's Mt Maunganui terminal is located at 194 Totara Street in Mt Maunganui, on the eastern shore of Tauranga Harbour. The facility occupies an area of approximately 3.3 hectares and comprises a bunded tank compound containing eight vertical above-ground bulk storage tanks, truck loading facilities, a natural gas fired steam boiler, which is used to heat the fuel oil, and associated terminal plant. The terminal was constructed in the late 1950s, and has undergone various upgrades and refurbishments since then.

8. The site is generally level and is located in a heavily industrialised area of Mount Maunganui. The Mobil Terminal is surrounded by fuel and petrochemical storage facilities operated by others, the Port of Tauranga and vacant land. At its closest point, the Tauranga Harbour lies approximately 300m east of the Mobil Terminal.

9. Fuel products are delivered to Mobil's Mt Maunganui facility by ships, which berth at the oil berth at the southern end of the Port of Tauranga (**Port**). The fuel is pumped from the oil berth through Mobil's and shared industry wharf lines to both Mobil's and other fuel suppliers' bulk storage tanks. Mobil supplies the HFO from the bulk storage tanks to ships at the Port, using its bunker pipeline system and wharf pipeline.

[3] Aerial pictures of the Mt Maunganui terminal site are on page 3 and annexed at Tab 1.

10. The HFO is heated for efficient pumping to the wharves for refuelling (bunkering) of vessels. The HFO is heated by an onsite natural gas-fired boiler and associated heat exchangers. Once heated, the HFO can be pumped to either the Port's main wharves for bunkering via Mobil's bunker pipeline system, or back to the oil berth via the wharf line.

11. The Port has granted Mobil a licence to maintain and use Mobil's pipelines on and under the Port's land and wharves. The bunker pipeline licence in place at the time of the discharge was granted on 25 August 1995 and was superseded by a new licence commencing on 1 September 2015.

The bunker pipeline system

12. Mobil's bunker pipeline system at the Port has a holding capacity of approximately 136,000 litres and a maximum flow rate in the order of 130,000 litres per hour. It is comprised of a main line and lateral pipelines, and is used to refuel (bunker) ships.

13. The main line (250mm diameter) is approximately 2,700 metres long and runs from Mobil's terminal to the main wharf at the Port, and then along the wharf within the seawall.

14. At 21 locations, lateral pipelines (150mm diameter) run from the main line, through the sea wall, beneath the wharf (ie over the sea), towards the seaward edge of the wharf. These 21 pipelines are referred to as

"laterals" and service 11 berths.[4] The laterals are numbered in accordance with their distance from the northern end of the main line.[5] The first lateral (furthest from the bulk storage tanks) is at 15 metres and the last lateral (closest to the bulk storage tanks) is at 2,056 metres.

15. The bunker pipeline system was originally installed in the 1960's. In 1985, the main line and the laterals from 40 metres to 1,402 metres were replaced. The new laterals were all 150 NB Schedule 40 (which means the pipes had a wall thickness of 7.11mm).

16. The main line was replaced again in 1994 and this time it was buried behind the sea wall. At the same time, some sections of some of the laterals were replaced, but not all. The lateral sections that were replaced were upgraded to either 250NB Schedule 40 (wall thickness of 9.27mm) or 150NB Schedule 80 pipe (wall thickness of 10.97mm).

17. The section of lateral 1340 from which the oil discharged on 27 April 2015 was not completely replaced in the 1994 upgrade works. The section of pipe that failed on 27 April 2015 was 150 NB Schedule 40 (wall thickness of 7.11mm) and was 30 years old. Further detail regarding the failed section of pipe is provided below, after a description of the incident.

18. At the time of the discharge, Mobil's main line had five isolation valves along its length and if bunkering occurred at the 15m, 120m, 170m, 230m or 290m laterals, then none of the isolation valves could be closed and all of the laterals would be under pressure during bunkering. (This was the situation on the day of the spill.)

Incident

19. At approximately 7am on Monday, 27 April 2015, SGS New Zealand Limited (**SGS**) began preparatory work for bunkering 250 metric tonnes (approximately 266,000 litres) of HFO[6] to the vessel *Sofrana Joinville* at the Port. The vessel was at berth 1 and the bunkering was to be through the lateral at the 230 metre mark.

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[4] An aerial photograph of the main line and 21 laterals is annexed at Tab 2

[5] Diagrams of the main line and 21 laterals are annexed at Tab 3.

[6] "Heavy fuel oil" encompasses a wide range of oil. The specific oil in this case was 180 centistoke marine fuel oil.

20. SGS started bleed pumping into the empty main fuel line at 8:00am.[7] SGS stopped the bleed at 8:45am when the pipeline was full of HFO to the end of the lateral and the pressure was at 4 bar (58 pounds per square inch (**Psi**)) at the pump in the terminal yard. At 8:50am, SGS started bunkering to the *Sofrana Joinville's* fuel tanks with the pump in the terminal yard set at 4 bar while the intergrity of the connection to the vessel was checked. The pressure at the pump in the terminal yard was then raised to 7 bar (101.5 Psi) for approximately two hours until the bunkering was nearly complete.

21. At some point on the morning of 27 April, oil began discharging into the sea around berth 8 (where lateral 1340 is).

22. Staff from Tauranga Bridge Marina (**TBM**), which is approximately 2 kilometres south of lateral 1340, noticed signs of a possible oil spill near the marina at 10:50am. At 10:59am, TBM staff confirmed that what they had seen in the water was in fact oil, and TBM's manager called Bay of Plenty Regional Council's (**Council**) Pollution Hotline to report an oil spill. TBM also called the Port on UHF and reported black oil coming from the main wharf.

23. At 11:00am, SGS (at this time unaware of the oil spill that was occurring one kilometre to the south of where they were working) completed bunkering of 260,000 litres of HFO to the *Sofrana Joinville* at berth 1, and the crew began preparing to bunker a second vessel, *Olomana*, at berth 2. This involved the cessation of pumping and an air blow of the hoses between the dry-break coupling and the *Sofrana Joinville* to clear fuel from those hoses. At that time, the pressure in the pipeline was approximately 1 bar (14.5 Psi) during this preparation period, which is the static head pressure of the fuel oil in the delivery tank.

24. Meanwhile, Port staff were trying to locate the source of the oil spill reported by TBM. After oil was found discharging near lateral 1340, the Port contacted TBM, the Council and SGS. The Port's call to SGS was at 11.29am and they told SGS' branch manager that there had been reports of oil on the water at or around lateral 1340 and that the situation was "quite a mess".

[7] The pipeline is normally left empty, so "bleeding" involves filling the pipeline with oil prior to bunkering oil to a ship.

25. SGS' branch manager contacted (the SGS bunker pump man working from the Mobil yard) at 11:32am and told him there had been reports of oil in the water at the 1340 metre mark. He requested that the bunker pump man isolate the line and not to re-start the pump. Upon notification, the bunker pump man immediately ceased bunker operations.

26. By 11:44am, lateral 1340 had been isolated by closing valves on the pipeline near laterals 1244 and 1731, which were the closest valves either side of the leak.

27. At 11:55am, the Council's Regional On-Scene Commander, Adrian Heays arrived at berth 7 at the Port of Tauranga. At that time there was a strong northerly wind and an incoming tidal flow. Mobil's Mt Maunganui Terminal Manager arrived at 12pm and initiated Mobil's Emergency Response Plan. At 1:00pm Mobil's contractors inspected lateral 1340 and confirmed the discharge had stopped. The Council's Regional On-Scene Commander declared a Tier 2 oil spill response at 1:45pm. The following photograph shows oil spreading south from under the wharf at lateral 1340 at 4.11pm.

Investigation

28. Council's investigation of the spill began on the morning of 28 April 2015.

29. A Council enforcement officer, John Holst, spoke with Mobil's Terminal Manager at 11am. The Terminal Manager acknowledged the oil spill had been from a Mobil fuel pipeline and said that the discharge had been caused because the fuel pipeline had leaked due to rust.

30. The Terminal Manager told Mr Holst that Mobil's contractor, was going to remove the damaged section of the pipe and cap it. Mr Holst explained to Mobil's Terminal Manager that the damaged section of pipe and associated pipework, including the pipe's valve, was important evidence for the Council's investigation of potential offences under the Resource Management Act 1991 (**RMA**). He said that once the damaged section of pipeline and associated parts had been removed, he would like to store them in a locked Council storage facility at the Port, where they could later be analysed by both parties' experts.

31. Mr Holst understood from his discussions with Mobil's Terminal Manager and Mobil's contractors that he would be contacted as soon as the damaged section of lateral 1340 and associated pipework had been removed so he could oversee transportation of those items from the wharf to the Council's storage facility.

32. After his discussion with the Terminal Manager and contractors about custody of the lateral pipe following its removal, Mr Holst took the following photograph of the damaged section of lateral 1340 in situ, beneath berth 8.

33. When Mr Holst returned to berth 8 later that day, after assisting with the oil spill response, he saw that the damaged section of lateral 1340 and associated pipework had been removed. After making further inquiries he established that the damaged section of pipe had been taken to Mobil's premises.

34. Mr Holst was not able to obtain access to the damaged section of the pipe, so on 29 April 2015 the Council applied for, and was granted, a warrant to search for and seize the second of lateral 1340 and associated parts. The warrant was executed the same day, with the damaged section of pipe being removed from Mobil's Totara Street facility and taken to a secure Council storage location. It has since been analysed there by Mobil's experts and the Council's experts, and the results are referred to in the following section.

Cause of the discharge

35. The HFO escaped from two holes in lateral 1340, one of which was measured to be 4mm in diameter and the other which was measured to be a 8.5mm x 5.8mm elongated hole (as shown in the following photograph).[8]

36. The holes were caused by corrosion initiating and progressing under the pipe coating on the external pipe surface.

37. Council's corrosion expert, Les Boulton of Les Boulton & Associates Limited, and Mobil's corrosion expert from Aurecon Limited, inspected the failed lateral.

[8] Other photographs of the damaged section of lateral 1340 are annexed as Tab 4.

38. Mr Boulton concluded:

(a) As the lateral pipe was located just above the high tide level, it is likely that contaminants (e.g. sea salts and grime) may have gained ingress under the coating after the external paint cracking had initiated.

(b) The corrosion mechanism occurring under the paint coating was mainly surface corrosion but as differential aeration conditions prevailed, crevice corrosion occurred. Crevice corrosion is insidious and it is also more rapid than general corrosion on steel.

(c) The appearance of the corrosion perforations indicated that both the pipe wall holes resulted from thinning of the pipe wall before failure (perforation) of the pipe wall.

(d) The external pipe coating (three paint layers) had delaminated from the steel pipe wall due to underfilm corrosion occurring after the coating had become weakened due to cracks in the paint slowly developing.

(e) Crevice corrosion initiated on the external surface of the lateral pipe and the dense black corrosion product (magnetite) was trapped under the external coating adhering to the external steel pipe wall.

(f) The volume expansion of the corrosion product (magnetite) formed under the coating resulted in the paint becoming weaker, thereby extending the cracking in the coating. Eventually, the paint cracking became severe, underfilm corrosion was exacerbated, and the corrosion on the steel pipe surface accelerated until the pipe wall strength was compromised at two localised areas where the holes subsequently formed. It appears that pressurised oil sprayed out of the two lateral pipe perforations onto the concrete beam above the lateral pipe and onto surrounding structures and then the HFO escaped into the harbour.

(g) It would be expected that routine inspection by appropriately qualified pipeline inspectors would have detected coating defects, such as paint cracks, on the lateral oil pipe once they developed to the point that they were able to be detected by visual inspection. Inspection of the laterals for coating defects is important because the lateral pipes cannot be cathodically protected to mitigate any localised corrosion occurring on the steel pipe wall due to coating defects that may have developed on the steel pipe wall as the lateral pipe aged.

(h) The valve in the lateral pipe adjacent to the failure location showed severe surface corrosion.

Mobil's knowledge of issues with lateral 1340

39. Issues with the laterals, including lateral 1340, were identified on various occasions before the discharge on 27 April 2015.

40. In August 2010, when SGS undertook ultrasonic thickness testing and a visual inspection of the pipeline (which is something it was engaged by Mobil to do every five years). SGS' report to Mobil identified issues with a number of lateral pipes and, in particular, noted "Lateral 1340m coating breakdown".

41. On 7 September 2011, SGS undertook follow-up ultrasonic thickness testing of the laterals. However, during this inspection SGS was unable to carry out ultrasonic testing on two of the 21 laterals because access was blocked by ships. One of the two untested laterals was lateral 1340.

42. Mobil also engaged a local engineering firm (Page Macrae) to carry out quarterly visual inspections of the pipeline. Issues with lateral 1340 began being identified in those quarterly inspections in November 2013. A Page Macrae employee who works fulltime at Mobil undertook this inspection. In his maintenance inspection report dated 13 November 2013 the Page Macrae employee requested maintenance for lateral 1340 stating: "PIPES RUSTY" and "RUSTY VALVE".

43. In a more detailed report prepared on 6 December 2013 for Mobil's Terminal Manager and Mobil Engineering, the Page Macrae employee recorded lateral 1340 as a "1" (on a scale of 1 to 5, "1" being bad and "5" being good), and noted that the paint, bolts and overall condition of the valve, and the paint and overall condition of the pipework and supports / walkways & ladders, needed attention. His report included a photograph

showing the defect on the section of lateral 1340 from where the HFO later discharged from the two holes on 27 April 2015.[9]

44. In all of his subsequent quarterly reports leading up to the discharge event in April 2015 the Page Macrae employee prioritised the defect in lateral 1340 as a "1".

45. In December 2013, the Page Macrae employee discussed his concerns with Mobil's Terminal Manager and Mobil Engineering and said that lateral 1340 needed to be fixed.

46. When the issue was raised with Mobil's Terminal Manager by the Page Macrae contractor, Mobil's Terminal Manager agreed that it needed to be addressed. As Mobil's Terminal Manager had little experience in dealing with corrosion on pipework in marine environments he sought advice from Mobil's site engineers.

47. The engineers considered the issue definitely needed to be addressed but thought that Mobil had time to address it because they did not identify the seriousness or urgency of the issue.

48. Because of other commitments, the site engineers suggested that Mobil engage external engineers to assess the issue. In December 2013 Mobil engaged Aurecon to prepare a scope of works for maintenance work to be carried out on its HFO pipelines at Tauranga including lateral 1340. Aurecon's March 2014 scope of works identified pipework/coating repairs to lateral 1340 as being in the highest priority category of maintenance works.

49. After receiving Aurecon's report Mobil scheduled the maintenance works into its budget and Terminal Masterplan.

50. Maintenance works on lateral 1340 were scheduled to be undertaken in the second or third quarter of 2015 but the discharge occurred before this work was carried out on lateral 1340.

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[9] Extracts from this report are annexed at Tab 5.

Condition of other laterals

51. In addition to the issues with lateral 1340, coating issues were also identified on a number of other sections of Mobil's pipeline during inspections prior to the discharge in April 2015.

52. In the August 2010 SGS report, SGS stated:

> A visual inspection was carried out on the bunker line laterals underneath the wharf at Mount Maunganui. ….
>
> The general wrap / coating condition and pipe support condition is good. Minor isolated coating damage / breakdown was noted on all laterals.
>
> Areas that require attention are highlighted in the following photographs.

53. The photographs in the August 2010 SGS report highlighted coating breakdown and/or corrosion on laterals 120m, 170m, 290m, 452m, 1000m, 1060m, 1250m, 1340m and 1488m.[10]

54. From April 2013 bunker line inspection reports referred to rust and/or coating defects in the following laterals:

    (a) April 2013 report – Lateral 975M.

    (b) July 2013 - Laterals at 975M and 998M.

    (c) October 2013 - Laterals at 290M, 525M and 998M.

    (d) Nov 2013 - Laterals at 1244M and 1340M.

    (e) January 2014 - Laterals at 975M, 998M, 1244M and 1340M.

    (f) July 2014 - Laterals at 230M, 355M, 525M, 720M, 998M, 1060M, 1244M and 1340M.

    (g) December 2014 - Laterals at 120M, 290M, 355M, 455M, 525M, 1060M, 1244M and 1340M, 1488M.

55. There is no evidence that any of the foregoing rust and/or coating defects were addressed prior to the discharge on 27 April 2015. However, the timing and urgency of coating repairs can extend up to several years without significant corrosion or degradation of the pipeline wall thickness.

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[10] Extracts from that report relating to lateral 1340 are annexed at Tab 6.

56. The Council engaged a pipe expert Roy Askham of Inspec Limited, to inspect and assess the condition of Mobil's lateral line pipe work at the Port in May 2015. On 26 May, Mr Askham inspected four randomly selected lateral pipes and found visible external corrosion in all four (ie 975, 998, 1060 and 1244). The following photograph of the 1244 lateral and was taken by Mr Askham on 26 May 2015.[11]

57. Following Mr Askham's inspection, he reported to Council that:

(a) These pipes were all in the splash zone of the incoming tide.

(b) The rusted piping in all four areas he inspected should be replaced.

(c) The remainder of the lateral pipes should be subjected to a thorough visual inspection by a qualified inspector and then replaced or subjected to additional testing on a case by case basis.

(d) Wherever scale corrosion was present it had to be removed as it will cause a more aggressive degradation to the pipe material.

[11] Other photographs of corroded lateral pipes taken by Mr Askham on 26 May 2015 are annexed at Tab 7.

58. Mobil's experts, Aurecon, responded to Mr Askham's report, stating:

(a) They agreed with Mr Askham's factual observations of the lateral pipes, namely, that the pipeline has suffered from corrosion of a particular nature under a coating that has reached the point where maintenance is required.

(b) They disagreed with Mr Askham's view that the condition of the pipeline laterals justified their entire replacement.

(c) Mobil should assess the need to retain each lateral and maintain or replace sections of the pipe only where this is justified.

Oil spill response

Amount spilled

59. It is not known how much HFO was spilled into Tauranga Harbour on 27 April 2015 due a number of uncertainties, including the duration of the discharge, the pressure in the bunker pipeline at the point where the discharge occurred, and when the corrosion cap came off lateral 1340 allowing the HFO to flow into the harbour.

60. The parties' experts met to discuss their respective estimates of the volume of oil discharged but were unable to reach agreement.[12]

61. The Council's expert (Inspec) has calculated that between 3,900 and 6,000 litres of HFO was discharged into the harbour on 27 April 2015.

62. Mobil's experts, Aurecon, calculated that between 2,265 and 3,600 litres of HFO was discharged into the harbour on 27 April 2015.

Oil spill response

63. At the time of the oil spill, high winds, rain, a raised sea state, and an incoming tide, combined with wind direction, resulted in significant oiling of parts of two areas of the shore within the southern part of Tauranga Harbour's shoreline, ie the western side of Motuopuhi Island and a section of the shore of Maungatapu Bay.

[12] A memorandum that the experts prepared on 12 April is annexed at Tab 8.

64. The oil initially affected Tauranga Bridge Marina, as shown in the following photograph taken on 27 April.

65. The oil then travelled up into the harbour where it washed ashore in the Maungatapu Bay area at around 2pm, initially covering approximately 300 metres of the beach north-east of Turret Road. Bad weather blew oily debris above the high tide mark, trapping it in coastal vegetation.

66. Oil was also trapped under the wharf amongst the pilings, and reached Pilot Bay, Mount Maunganui and Matakana Island (approximately 5.5 kms northwest of lateral 1340), on 1 May.

67. The following photographs show oil on the shore at Maungatapu, approximately 8 kms south of lateral 1340, on 28 April.

68. During the ensuing four and a half month oil spill response, approximately 59.4 tonnes of waste was removed (much of this being vegetation). The oil spill response was led by Council in accordance with its oil spill response procedures and in cooperation with local iwi teams and Mobil in the immediate weeks following the spill. The Council's Tier 2 oil spill response was formally terminated on 14 September. Subsequent to this, limited removal of oiled shoreline material has been undertaken, where required, by Mobil as part of the sign-off conditions of the Tier 2 response.

69. The following photograph shows clean-up work near TBM.[13]

70. The oiled waste was stored in sealed skips before being assessed at Tauranga's transfer station at Te Maunga (as shown below) and disposed of at the specialist Hampton Downs facility in the Waikato.

71. To date, Council’s costs relating to the oil spill response amount to $1,187,230.81 and Mobil has fully reimbursed the Council for these costs.

72. As part of the Council’s oil spill response, an environmental monitoring programme was implemented, in conjunction with Mobil and local iwi groups, to investigate biological impacts and sample key environmental parameters for oil contamination. The results of this monitoring are discussed in the following sections.

[13] Further photographs from the oil spill response are annexed as Tab 9.

Affected environment[14]

73. The oil spill affected different parts of Tauranga Harbour. Tauranga Harbour is identified under the Bay of Plenty Regional Coastal Environment Plan in its entirety as an outstanding natural feature and landscape, and nearly the entire harbour (except the port area) is identified as an area of significant conservation or cultural value. The harbour has also been identified by the Department of Conservation as an area of outstanding natural features and landscape supporting high biodiversity.

74. Tauranga harbour has four distinctive components: (i) wetland along its margins; (ii) estuaries where the many rivers and streams enter the harbour; (iii) extensive inter-tidal flats; and (iv) the sub-tidal area. This extensive range of habitats supports a wide range of birds and has resulted in the whole of Tauranga Harbour being ranked as an Outstanding Site of Special Wildlife Interest. The harbour meets the International Union for the Conservation of Nature criteria as a wetland of international importance for wading birds. Tauranga Harbour is an important habitat for eight nationally vulnerable species of coastal birds (including the New Zealand dotterel, the reef heron and the Oystercatcher). The harbour is also a nursery for flounder, yellow eyed mullet and bronze whaler sharks and has occasional visits from killer whales and elephant seals.

75. Tauranga Harbour and surrounding lands form the traditional rohe of Ngaiterangi Iwi. Maintenance of kaimoana and coastal water quality is particularly important. The harbour is rich in cultural heritage and one area of particular significance is Pilot Bay (Te Tahuna o Waikorire).

76. The sheltered water of Tauranga Harbour is popular for fishing, diving, and swimming.

77. Areas in and near Tauranga Harbour that were most affected by the oil spill are as follows:

    (a) Tauranga Port, which is an artificial shoreline that provides habitat for flora and fauna.

[14] An aerial photograph showing the areas impacted by the oil spill as annexed as Tab 10.

(b) TBM's marina, which is another artificial shoreline that is a known feeding area for penguins and shags. The marina also provides habitat for fish species.

(c) The saltmarsh at Maungatapu Bay, which forms part of a Category 2 Special Ecological Area having local conservation significance in Tauranga's City Plan and is also part of an Indigenous Biodiversity Area listed in the Proposed Bay of Plenty Coastal Environment Plan. Maungatapu Bay is a known high tide bird roosting area for wading species. Parts of Maungatapu Bay have significant cultural value for local iwi. An urupa is located in the bay.

(d) Motuopuhi Island is located near the entrance of Waimapu Estuary (just north of Maungatapu Bay). The northern shoreline comprises sections of sandy shore interspersed with seagrass, localised saltmarsh and imported rock. There is a small area at the western end of the north side of the island which consists of soft sediments and saltmarsh vegetation and adjacent to that is sand spit which is identified as a high tide bird roost for wading bird species.

(e) Pilot Bay and Mauao (Mount Maunganui) are areas of cultural and spiritual significant to iwi. Sandy Bay on the southern point of Mauao is within the Te Maunga Mauao Mataitai fisheries reserve.

(f) Pane Pane Point, Matakana Island is located at the southeast end of Matakana Island. It has sensitive dune vegetation and is part of the second largest breeding colony of New Zealand dotterel (tuturiwhatu) in the Bay of Plenty. It is an important roosting site for other birds including oyster catcher (torea), godwit (kuaka) and knots. The site is also highly culturally sensitive (waahi tapu) and mahinga kai.

(g) Rangiwaea Island (on the eastern side, within Hunters Creek). This area is a significant shore bird roost. Species include godwit (kuaka), knots and oystercatcher (torea). It is also a significant area for mahinga kai, crab fisheries (papaka), kanai (mullet) and tuangi (cockle).

Environmental effects

78. Council scientists have completed an environmental effects report, which is annexed at Tab 11. Key points of that report are set out in this section.

79. The key contaminant of concern from spilled HFO is Polycyclic Aromatic Hydrocarbons (PAHs). The uptake of PAHs by shellfish poses a potential food safety risk because some PAHs are known to pose a carcinogenic risk from long term consumption.

80. Secondary contaminants of potential concern include trace elements (sometimes referred to as heavy metals) and volatile aromatic compounds such as benzene, toluene, ethylbenzene, and xylene. Trace elements have been analysed by Manaaki Taha Moana in shellfish sampling undertaken in May 2015. No trace element sampling has been undertaken by the Council. BTEX sampling was undertaken in a single water sample collected on 29 April by the Council. A low concentration of toluene (1.3mg/m^3) was measured.

81. Oil spills of this nature can have serious long lasting impacts affecting ecosystem functioning and commercial tourism, fishing, cultural and recreational use. Initial environmental effects of the spill were moderate to significant and localised to those areas heavily impacted by oil in the harbour. In the southern harbour, Maungatapu Bay and Motuopuhi Island were the two areas significantly impacted by the spill and this is reflected in analytical monitoring results obtained from collecting sediments and biota samples.

Summary of main areas impacted

82. Tauranga Port – Sections of the wharf were heavily impacted by oil. Spilled oil adhered to the hard surfaces of piles and walls under the wharf. Oil was also present on the surface of water and coated large amounts of floating debris (such as seagrass) which was trapped on the back wall. Sections of wharf piles were systematically scraped to remove oil fouled encrusting biota.

83. TBM's marina – Parts of the marina, boats, pontoons and rock riprap were contaminated by oil. The total cost to TBM of dealing with the oil spill was $248,000 (including GST). This was for cleaning up oil at the marina, cleaning oil around the piers, shifting contaminated vessels at the marina

for cleaning and replacing contaminated mooring lines and fenders. Mobil set up a reimbursement scheme to facilitate these costs being met and has reimbursed TBM all of those costs to date. TBM is still quantifying its general losses from the oil spill, ie lost income due to people avoiding the marina while it was contaminated with oil. Ongoing costs associated with the clean up at TBM continue to be met by Mobil in full. At least 40 of the vessels berthed at TBM were contaminated with oil and had to be lifted out of the sea for the oil to be removed. Mobil paid a local vessel lifting and cleaning company directly for this work.

84. Maungatapu Bay was the area most significantly impacted by oil in the inner harbour. The impacted area extended over approximately 1.2 km and included 350 metres of fringing upper tidal natural saltmarsh and sandy/muddy shore habitat, 530 metres of artificial rip rap rock wall along Turret Road causeway and 90 metres of artificial wooden and concrete seawall adjacent to Moiri Place. Two birds in this area died as a result of becoming oiled, one of which is shown in the following photograph shortly after it was found. The one penguin that was affected by the spill was cleaned off, rehabilitated and released.

85. Motuopuhi Island - There was heavy oil fouling of the fringe saltmarsh habitats at the western end of the island (~20 mm thick) and oil deposits along the sandy shoreline habitat. Along the western end a strip of saltmarsh vegetation (~2 m wide) was removed as well as sand and rock. Seagrass beds along the outer edge of the island were lightly impacted by oil. Adverse environmental effects appear to range from minor to significant on the island shoreline and surrounding habitats (~30 m of island). As observed at Maungatapu Bay, the significant deposits of oil in

the shoreline area have resulted in secondary dispersion of small quantities of oil, observed as sheens on the tidal flats, with monitoring results confirming PAH contamination of sediments.

86. Pilot Bay and Sandy Bay (on the southern shore of Mauao) received a moderate amount of oil contamination after the oil spill. Oiled sand and debris was removed over a two week period in which oil patties and oiled debris washed ashore with each tidal cycle. An oiled bird (shag) was collected from Pilot Bay and numerous lightly spotted gulls were seen in Pilot Bay shortly after the spill. An oiled penguin was removed from Sandy Bay, Mauao.

87. Pane Pane Point, Matakana Island - Oiled seagrass and small quantities of oil were deposited along approximately 1.5km of the shoreline. Oiled sand and debris was removed over a three week period as it washed ashore. Subtidal oiled debris and buried layers of oil were located on the beach, requiring extensive work by local iwi to remove it. A moderate amount of sand rock and oiled debris was removed from the beach.

88. Rangiwaea Island - Moderate amounts of oil and oiled debris washed up along the shore on the eastern side of the island (near the Marae and jetty), within Hunters Creek.

Initial monitoring of effects

89. Initial monitoring results indicate oil contamination of sediments and shellfish was generally limited to higher shore areas of fringing saltmarsh and sediments. Initially shellfish contamination (elevated PAH concentrations) was limited to higher shore deposit feeding species such as titiko (mud flat snail).

90. However, recent sampling, for example in September 2015, of mud-snail (titoki) adjacent to the causeway in Maungatapu Bay and of wedge shells in the uppers shore at Motuopuhi Island found PAH concentrations above what is considered a background level. Levels of oil contamination have typically declined in samples collected since the initial period of impact from the oil spill.

91. To date, the results from the short-term monitoring programme indicate that environmental impacts to sediments and shellfish was greatest at sites directly impacted by oil.

Long-term monitoring

92. Monitoring of shellfish at a range of locations has continued since the spill and an additional environmental monitoring program is planned by the Council (in 2016) to monitor PAHs in shellfish and sediment at key locations in the southern part of Tauranga Harbour. The Tier 2 oil spill response sign-off required further investigation at a number of impacted sites, and remediation where required. Any further monitored parameters will include sediments and shellfish for PAH concentrations and examination of saltmarsh for potential regeneration in impacted areas that were cut during the shore clean-up process.

93. Subsequent to the spill, it was identified that burial of stranded oil (in high tide areas) had occurred. This occurred at Matakana Island and iwi removed any oil buried under sand. Burial also occurred around the northern shore of Motuopuhi Island. Subsequent oil spill clean up work identified buried oiled sand and those areas were systematically examined to remove buried oiled sand. The Tier 2 sign off includes a requirement for Mobil to undertake ongoing assessment for residual oil and to check for tar balls/patties being redistributed from with sand that had been worked to remove oiled sand. These inspections (referred to as SCAT[15] surveys) are carried out (by Mobil) after weather events which may have remobilised elements of oiled sand back to the surface and into the environment. These surveys are being undertaken along the Maungatapu Bay and Motuopuhi Island shorelines.

Defendant's work on the pipeline following the discharge

94. On 1 May 2015, the Council issued an abatement notice to Mobil requiring Mobil to conduct an engineering assessment as to the structural integrity of its bunkering pipe network at the Port of Tauranga.

95. Mobil decommissioned its entire HFO pipeline and gave the Council an undertaking that:

    (a) All oil would be removed from the lateral lines by 7 June 2015; and

    (b) The HFO bunker pipeline would not be used until all the lateral lines were checked and replaced where required.

[15] Shoreline Cleanup and Assessment Technique (SCAT) is a systematic method for surveying an affected shoreline after an oil spill, which originated during the response to the 1989 *Exxon Valdez* oil spill.

96. Mobil undertook an engineering assessment of the pipe network and provided this to Council.

97. Following the engineering assessment Mobil has subsequently carried out major modifications to its HFO pipeline system, including:

(a) Permanently reducing the total number of laterals from 21 to 7.[16] Of the seven remaining laterals, six are located over water with the seventh lying entirely in the ground behind the sea wall.

(b) Replacing all of the six remaining laterals located over water with new pipe from the sea wall to the edge of the wharf.

(c) Each lateral pipe has an isolation valve so that when HFO is being bunkered to a vessel, only the relevant lateral over water being used is live. (In contrast, at the time of the oil spill all 21 laterals were under pressure due to the bunkering occurring at the furthest berth from the Mobil Terminal, past all of the existing five isolation valves.)

(d) Ultrasonic thickness testing has been carried out on the section of all 21 laterals from the main line to the sea wall to verify integrity.

98. Mobil has sought and been granted resource consent for this modified pipeline at the Port of Tauranga.

Previous compliance history

99. The Council has not taken any previous compliance action against Mobil.

100. Mobil has two prior convictions for RMA offences:

(a) In 1993 it was convicted for a discharge of 300 litres of diesel and water into the Kaiwharawhara Stream from its Kaiwharawhara depot.[17]

(b) In 2001 it was convicted for discharges of an estimated 1800 litres of petrol from an underground pipe at its Whitianga marine fuelling facility.[18]

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[16] A diagram showing the laterals to be removed and replaced is annexed as Tab 12.
[17] Wellington Regional Council v Mobil Oil NZ Ltd DC Wellington CRN3085010916, 13.09.93.
[18] Waikato Regional Council v Mobil Oil NZ Ltd & Ors DC Auckland CRN1075003201, 17.10.01.