

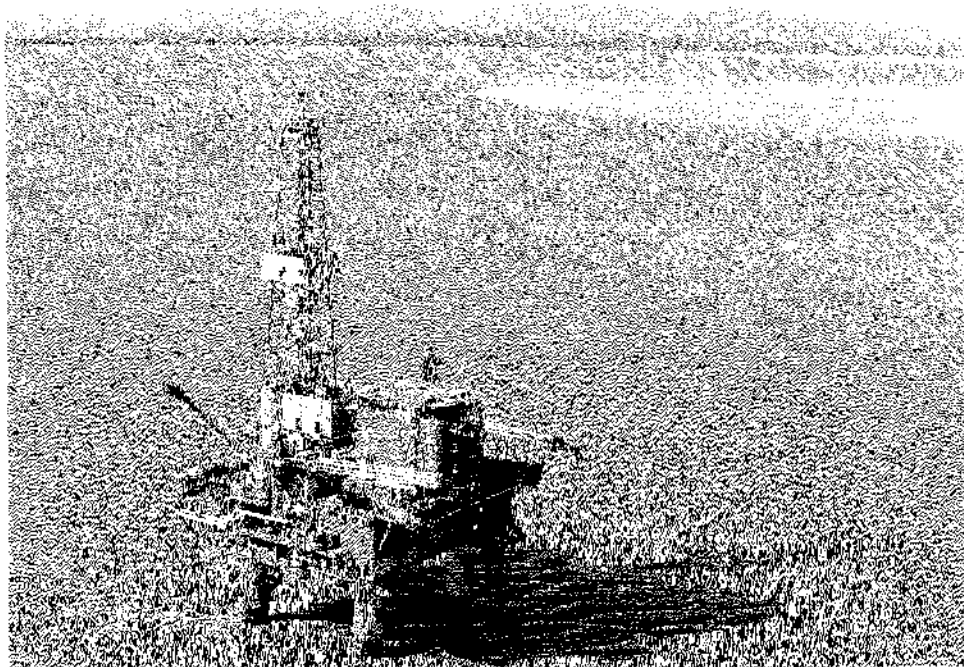
PLATFORM A

MIDDLE GROUND SHOAL FIELD

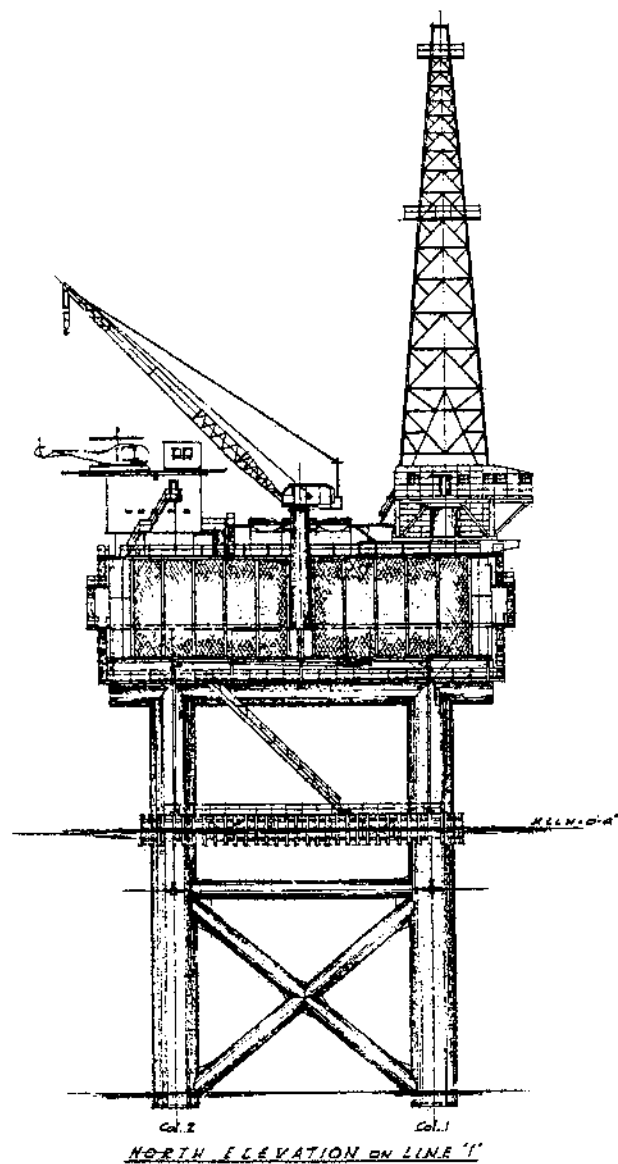
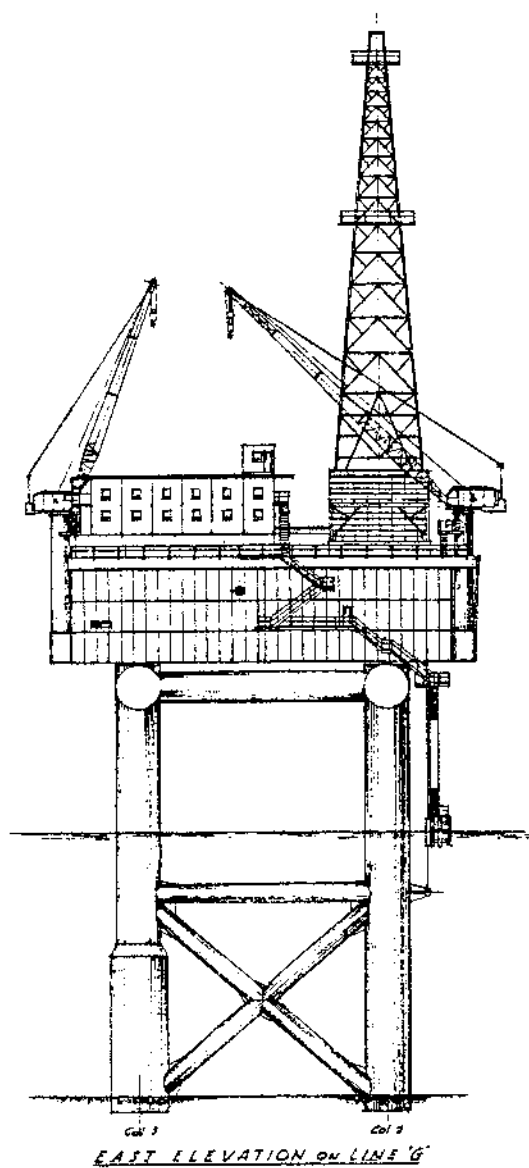
INSTALLED 1964

MGS Platform A

1. Field name:.....Middle Ground Shoal field
 2. Platform operator:.....Shell Western E&P Inc.
 3. Platform owners:.....Shell Western E&P Inc.
 4. Original operator:.....Shell
 5. Structural design firm:.....Earl & Wright
 6. Fabrication yard (structure):.....Kaiser Steel in Oakland, California
 7. Installation year and contractor:.....1964, Kaiser Steel
 8. Waterdepth (at MLLW):.....83 feet
 9. Number and diameter of legs:.....Four legs; 14.5 feet diameter. Legs 3 and 4 bell out to 18.5 feet diameter below minus 29 feet MLLW.
 10. Number, size and penetration of piling:.....Thirty two 32-inch diameter piling with 30 feet penetration
 11. Number, size and penetration of inner piling:.....Thirty two 24-inch diameter with 120 feet penetration
 12. Method of installation (driven, drilled, combination):.....32-inch driven, 24-inch drilled
 13. Length of grouted interval in legs:.....From -20 to +36 ft MLLW
 14. Design codes used (UBC, AISC, API RP 2A, etc):.....AISC; Zone 3 UBC (1961)
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15. Number of completed wells in each leg through piling:.....Eight wells in each of legs 1, 2 and 4
 16. Other completed wells in each leg:.....None
 17. Top girders used as storage tanks?.....Yes
 18. If so, what type of liquid:.....Diesel fuel
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19. Design criteria used:
 - (1) Ice thickness and strength:.....6 ft on two front legs, 3 ft on two back legs; 300 psi
 - (2) Wave height and period:.....41.5 feet with a 10.8 second period
 - (3) Wind:.....65 mph with 100 mph gusts
 - (4) Earthquake:.....0.15 g per UBC 1961, Zone 3
 - (5) Temperature:.....Minus 38° F above water, plus 28° F below water
 - (6) Current:.....10 feet per second
 20. Design considerations:.....20 year design life
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21. Unusual circumstances during installation?.....None
 22. Significant modification or additions to topsides:.....Yes, added lower deck in 1965, 40 x 30 foot gas compressor cantilever and 12 x 30 radiator cantilever in early 1970's, new quarters building and drilling rig in 1989.
 23. Any significant structural damage incidents?.....In 1971 the six foot horizontal brace between legs 1 and 4 was sheared off due to an iceberg becoming trapped inside the tower frame. The brace was replaced the same year. Reference: 1975 OTC paper 2165.
 24. Has platform structural design been re-assessed?.....Yes
 25. If so, by whom and for what reason:.....In 1971 by Earl & Wright and by Shell Head Office Civil Engineering to analyze consequences of loss of horizontal brace. In 1988 by Earl & Wright to review adequacy of deck structure. In 1993 dynamic analysis by Shell HOCE for new drilling program
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26. Type of steel used; above water and below water:.....Lukens L1-75-QT and Sheffield Super-Lo-Temp where low temperature steel required. A-36 elsewhere.
 27. Steel corrosion allowance used:.....None initially. Corrosion wraps added in 1965 and 1966 through the tidal zone on all four legs.
 28. Type of cathodic protection:.....Impressed current system
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29. Dates and API RP 2A levels of underwater inspection:.....Level II in 1971 and 1978. Level III in 1978, 1983 and 1988.
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MGS Platform "A" with new quarters and drilling rig.



Elevations of MGS Platform A with original quarters and drilling rig.
 Note the adjustable boat landing which was removed during
 the first year of operation.